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Editorials

Exit Doctor Greatheart: Enter Doctor Scrooge

IF the government is to adopt the principle of paying for the medical care of the indigent and medically poor, will it not in time affect the immemorial instinct of the doctor to volunteer himself on a vast scale to the service of institutions and individuals that need his skill and care? It is not to be supposed that the government could ever pay the entire cost in this sphere of human activity and human good will. This voluntary dedication will always be needed, but will it be proffered so unreservedly in the future, if unpaid for? No one ever thought of pay in this sphere before, but now things are shaping up very differently.

Or Else!

NAZI Germany, some time ago, in response to American criticisms, intimated that she might begin to take an interest in the affairs of the United States which we might not find pleasant. The American press has already begun to take an interest, Nazi-fashion, in the American Medical Association. One of our great dailies said on October 28, speaking of the "recalcitrancy" of the American Medical Association with respect to political medicine, that "we have only to contemplate the position to which the British Medical Association has been reduced as the result of a similar bitter



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opposition to what is unhappily called 'socialized medicine' to realize what may happen here." The British Association, it seems, has had many of its prerogatives taken away from it; control over scientific standards has passed largely to the State.

Capitulation on our part to political medicine would indeed wrest from the American Medical Association its control of "scientific standards."

One can guess the power of the medical underworld that seeks to break the American Medical Association when such great dailies serve that underworld's interests.

A Political Neurosis

THE cost of compulsory health insurance and the armament program, plus the increased taxes which we would have been in for even if these two projects had not loomed up, gives the citizen much to think about.

The Social Security system is about to be expanded in its old-age insurance and unemployment aspects. Meanwhile the WPA and the PWA go on. For the armament program alone a ten per cent increase will be added to the income tax. There will be a 1938 federal deficit of about four billion dollars and a cumulative deficit of about twenty-five billions.

But the citizen can and will take it.

Perhaps we have laughed prematurely at the Germans' lack of butter. For we believe that the politicians are still underestimating the cost-bearing capacity and tolerance of the tax-paying classes—particularly the tolerance. This timidity, on their part, amounts to a neurosis.

Naive Queries

IT seems to be assumed by the uplifters that the social and economic degradation brought about by the depression is not a temporary illness but a permanent sickness. We are not to go on to a better level of living for all the people but the major part of the population is to have only palliatives and poultices for their ailments forever. Medical care for all the people is demanded. Why not economic democracy for all the people?

Oh, no! What naive queries.

Our "Downfall" Postponed Again

WISHFUL thinking seems to tincture some of the reporting by the lay press of the issue of socialized medicine as discussed in certain medical organizations.

The *New York Times*, under the date of October 28, reported that the American Public Health Association, at its annual Kansas City meeting, "broke away from the traditional leadership of the American Medical Association, representing 110,000 organized private practitioners of medicine."

One would suppose, from this, that

there had been a very definite cleavage between the two organizations.

Then in the *Journal of the American Medical Association* of November 5, we find it stated editorially that the American Public Health Association "stands officially on virtually the same platform as the American Medical Association."

Bombing County Medical Societies

TO date, both the organized medical profession and independent medical groups have undertaken to put into effect various indemnity insurance plans of the non-profit, medically controlled and A.M.A.-endorsed type, quaintly oblivious to possible objection on the part of certain commercial interests which are presumably looking forward to future markets for themselves in this sphere of activity.

The disorder that we are sometimes beginning to witness when this subject comes up in our official transactions has, at times, been violent. If those responsible for the disturbances had been encouraged by commercially interested groups to produce an atmosphere of anarchy their efforts could hardly have been more vehement and spectacular. But more plausible is the likelihood that a profession divided by dissension and apparently unable to solve its problems will by this strategy of chaos be the sooner taken in hand by the State, which would undoubtedly gratify the wish of typical agitators.



RHEUMATOID ARTHRITIS

In this group I include all cases of so-called infective arthritis. Alas, we seem to be no nearer the solution of the etiology of this disease, and therefore it is impossible to know how to prevent the onset of it. What factors do enter into it? Let me first mention a few of those popularly held. Diet—I say no: heredity—no: dampness—no. What I believe to be the main predisposing factors are asthenia, whether due to overwork or mental worry, that is the soil, and sepsis, that is the seed. I can't help feeling that somewhere in that chain of events producing rheumatoid arthritis, sepsis is a link. I would add too my belief that sepsis acts possibly like the trigger that fires the gun. The bullet has then gone beyond recall.

G. R. P. Alden-Brown, M.D. In *The Prescriber*, June, 1938.

LABORATORY AIDS IN THE DIAGNOSIS OF

Biliary Tract Diseases

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IN hardly any other study of the human economy is there a greater necessity for more careful consideration of the laboratory findings, in the light of clinical studies, than in disease of the biliary tract.

The cholecystographic method of gallbladder study is standard technic and too well known to require discussion. However, there are several timely points which are well to bear in mind in x-ray conclusions regarding gallbladder states. First is the factor of non-visualization of the gallbladder, which has led such astute surgeons as Wilkie and Illingworth and others to state that "non-filling is a clear indication for cholecystectomy." Feldman, in *Clinical Röntgenology of the Digestive Tract*, also states that "an absence of gallbladder shadow is almost pathognomonic of a gross abnormal state in the biliary tract." However, it should not be forgotten that in 1925, S. Lange had shown that if 100 normal gallbladders are x-rayed, 10 of them will not visualize. Feldman believes that non-visualization of the normal gallbladder is uncommon. It has been shown that after medical treatment by high fat diet, antispasmodics, sedatives, and cholagogues, that within a few months, many of these "non-filling" gallbladders will fill normally. Obviously, surgery should not be utilized as a routine procedure for a "condemned"

gallbladder on the strength of non-visualization.

Another factor is a psychogenic type of icterus; biliary dyskinesia entailing spasm of the sphincter of Oddi can cause biliary colic because of spasm in the gallbladder tract and bile back-pressure. All gastro-enterologists know that a nervous and highly strung patient may very easily not drain "B" or gallbladder bile during the Lyon's non-surgical biliary drainage. After antispasmodics and sedatives have been administered for a few days, the gallbladder "B" bile is usually easily obtained when there is no gross gallbladder disease present.

A beautiful example of this presence of neurogenic biliary dyskinesia was obtained in a patient of the senior author. This patient was hospitalized in 1929, and a cholecystogram was taken in which no visualization whatsoever of the gallbladder was obtained. Immediately after the x-ray was taken, the patient confessed that she was in great fear at the time of her x-ray; she was terrified by the x-ray machine, and feared that she would be electrocuted. No change in diet or medication was given for the next three weeks, during which time the patient had a "rest cure." Another cholecystogram was taken by the same technic and the same radiologist. This time the cholecystogram revealed a perfectly functioning gallbladder with an entirely normal gallbladder shadow. At this time the patient was completely reassured and in no way nervous or apprehensive.

ANOTHER important point not to be forgotten is the fact that non-visualization of the gallbladder may be due to an aberrant anatomical position of the gallbladder. Positions over the spine, to the left of the spine or in the pelvis are frequent enough to require an abdominal film whenever the x-ray diagnosis is made of a non-visualized or dysfunctioning gallbladder. This technic should be routinely adhered to whenever this latter diagnosis is made, instead of using the small upper right quadrant films which are the routine procedures for cholecystography. In this way errors in diagnosis occur occasionally, bringing a "non-visualized" gallbladder (Röntgenographically) to the

From the Temple University Medical School, Department of Medicine. Read at the North End Medical Society and the North Branch of the Philadelphia County Medical Society, September 15th, 1938.

operating table. The surgeon may then demonstrate the aberrantly placed gall-bladder to the chagrin of the attending physician or radiographer.

It is important to note the findings of such seasoned observers as Ravdin, Professor of Surgery at the University of Pennsylvania, or of Dr. Bockus and collaborators at the Graduate School and Hospital in Philadelphia, or the recent report of Doran and his collaborators from the Bellevue Clinics. All these surgeons and clinicians have found non-surgical biliary drainage will diagnose the presence of calculi in the gall tract more frequently than cholecystography. Similarly, T. Grier Miller and his associates just recently and Harry Shay and Reigel, as well as Rafsky and numerous others, have reported statistical studies with the same superiority of diagnosis by the biliary drainage method rather than by cholecystography. This has been our experience as well, for many years. It should be emphasized at the outset, however, that the accuracy of such diagnosis is directly proportional to the training and skill of the individual in the recognition of cholesterin crystals and bilirubin calcium pigment, which, taken together, most frequently indicate the presence of cholelithiasis.

Training in the microscopic diagnosis of biliary sediment as obtained through the Lyon-Meltzer method must be thorough, just as in the case of any other technical procedure, e.g., gastro-intestinal roentgenology, or gastroscopy or proctosigmoidoscopy.

However, it should constantly be borne in mind that every technical method has its limitations, and that non-surgical biliary drainage, in certain instances (as in "billiard ball" calculi), may fail to diagnose the presence of cholelithiasis, just as the cholecystogram may fail to do so. However, when both methods are used for corroboration, the percentage of error, when combined with clinical and physical findings, is cut to the slimmest point.

Abscess of the Liver

IN the consideration of abscess of the liver, the type often influences the laboratory findings. Therefore, it is important to ascertain in the history, whether 1—Trauma, 2—previous chole-

cystitis, 3—appendicitis, 4—amebic dysentery, 5—rectal affections, 6—suppurative lesions in the pelvic organs, pyemic states, etc., were antecedent.

Solitary abscess due to *E. Histolytica* is relatively rare in the north temperate zone (but a most serious and frequent complication in the tropics). Ochsner and DeBailey found in a series of 73 cases an incidence of 36.12 per cent amebae in the stools examined. Stools should be carefully searched for amebae because the prognosis is good and treatment fairly simple in these cases, compared to pyogenic abscess.

A high polynuclear W.B.C. count is usual in either type, ranging from 10,000 to 30,000. If amebae are not found in the stools, the differential diagnosis is rarely made except in traumatic cases. Rogers refers to the relatively low percentage of polynuclear leukocytes in the chronic form.

Cysts of the Liver

INCLUDE the non-parasitic and parasitic. The non-parasitic cysts are extremely rare, and are only interesting in this discussion in so far as differentiation from hydatid cysts is concerned. In the non-parasitic, the contents may be dark, tarry or bile-stained, while in the echinococcus type there is a spring water-like, non-luminous fluid of low specific gravity often containing scolices and barbed hooklets. Membranes or daughter cysts may rarely be found in the feces as a result of expulsion by way of the bile ducts, and do not always denote rupture. In complicating rupture through the bronchi, gastro-intestinal tract, or externally through the skin, the discharge of hydatids is diagnostic.

Other interesting features of the echinococcus cyst are an eosinophilia which sometimes reaches 10 to 12 per cent, positive complement fixation test (using the fluid of the cyst as an antigen against the patient's blood serum), and positive reaction to Casoni's intradermal test.

Tumors of the Liver

LIVER function here depends on the extent of parenchymal damage by destruction of or pressure upon the liver cells.

A diffuse neoplasm will usually influence one or more of the most important tests. The van den Bergh and icteric index are usually progressively increased when once elevated at all. The suspected metastatic liver involvement, Snell believes, is best detected by the bromsulfalein dye retention test, which gives more conclusive evidence than any other laboratory method, seldom misleads, and has prevented unnecessary surgical procedures. Naturally, the test is useless if definite jaundice is present.

Bauer in his 1932 report rarely noted any significant change in the galactose tolerance test in metastatic malignancy, and Banks, Sprague, and Snell found inconstant results in the diagnosis of either primary or metastatic tumors of the liver (individual tolerance to biliary obstruction varies widely and the amount of hepatic parenchymal injury secondary to obstruction may likewise be variable). In dehydration with gastric or urinary retention, results should be interpreted with caution.

Primary carcinoma is not as rare as formerly thought. Fiske and Aegerter reviewed 600 cases in the literature and added two more last year. Crane utilized the Takata-Ara test (modified mercuric chloride reaction) as a differential diagnostic point between metastatic hepatic carcinoma and chronic cirrhosis, noting a negative reaction in six cases. Tumen and Bockus found a positive test in two of three cases of metastatic cancer.

The authors, in a series of 10 cases of secondary hepatic metastatic carcinoma, found that in obstruction phenomena associated with a positive van den Bergh the urobilinogen was positive in four cases and generally unreliable in others, as corroborated later by Soffer (seven cases with negative reaction).

Tumen and Bockus found amongst liver diseases that serum albumin was lowest in malignant obstruction but considered that a nutritional factor may have contributed. Gruskin found decreased specific gravity of the blood in hepatic malignancy as in all progressive diseases, and associated dehydration resultant from toxemia. The blood serum is paler than normal, due to loss of hematochromes.

In the hands of various observers the Gruskin diagnostic intradermal and

blood test for the presence of carcinoma and sarcoma has given valuable diagnostic aid.

Liver Function Tests

NO one laboratory test of liver function is unequivocally reliable due to the:

- 1—multiple known and unknown functions of the liver, and
- 2—the remarkable ability of the damaged liver to regenerate, and ability to
- 3—call upon its reserve function in the presence of disease.

The bromsulfalein dye retention test has consistently shown itself to be the most reliable index of liver function tests.

Liver function tests should be regarded as definitely informative and reliable in the presence of positive laboratory results. Negative laboratory tests for liver function do not necessarily exclude liver disease, because of hepatic regenerative and reserve capacities.

Both the Takata-Ara and the hippuric acid tests are good liver functional tests, but are handicapped by the fact that they are frequently positive in the presence of extrahepatic disease, as in renal and cardiac disease.

The galactose tolerance and blood phosphatase tests are valuable criteria in the laboratory differentiation between obstructive and non-obstructive or toxic or infectious jaundice.

The galactose tolerance test, to be most reliable, should be performed early in the case of jaundice. The blood phosphatase test has its main difficulties in the facts:

- 1—that often borderline readings are made, hovering about the 10 unit mark, and
- 2—that great difficulty exists in determining the unit standards of the test.

The urobilinogen is valuable if 24 hour specimens of the urine are examined and compared in the light of other tests; morning and afternoon specimens may be used.

The great value of the inverted albumin-globulin ratio in the presence of cirrhosis of the liver, especially in the

decompensated stage with ascites, has been shown.

The quantitative van den Bergh test is very valuable as an index to the quantitative estimation of jaundice. It has failed to live up to expectations for a guide as to the presence of obstructive versus non-obstructive jaundice via the qualitative reaction.

The concentration of total cholesterol in serum is not a comparatively reliable index of liver function. However, the esterified cholesterol is more reliable when diminished in concentration and percentage of total cholesterol. As shown by Bollman and Mann, Ravdin and others, diminution of the bile acids post-operatively by tube-drain from gallbladder or common bile duct or fistulous drain is a very sensitive index to liver function. This has been our experience as well.

In conclusion, it must be emphasized that several liver function tests should be used in conjunction with one another. These must be estimated in a comparative sense in the light of the clinical findings and are to be regarded with considerable respect when positive.

Syphilis

COMBINATION of a generalized lesion such as luetic interstitial hepatitis and a localized lesion such as carcinoma with inflammatory extension (perihepatitis) to surrounding structure can produce imitations of every imaginable clinical entity in which the liver is involved. O'Leary states that in his series, 31 out of 140 patients who had syphilis of the liver were diagnosed only at the time of abdominal operation. There are two major classifications of syphilis of the liver:

- 1—Congenital syphilis of the liver.
- 2—Acquired syphilis of the liver.

In the congenital type, a positive Wassermann occurs within a month or more; jaundice and heightened bilirubinemia are common.

In the acquired type, early acute benign syphilitic hepatitis is rare and occurs in from 3 per cent to 12 per cent of cases. Jaundice, positive Wassermann and varying degrees of dysfunction are present. Acute yellow atrophy may manifest itself by the finding of

leucin or tyrosin crystals in bile or urine. Non-surgical drainage usually reveals bile in spite of increasing jaundice. The urinary evidences of accompanying nephritis, as increased blood urea, creatinine, etc., are an unfavorable omen.

IN tertiary or late syphilis, it is found that 1 per cent of cases affect the liver, through gummas or focal and diffuse changes. Laënnec's cirrhosis occurs only in alcoholic syphilitics. Brule in an extensive study concluded that syphilis does not cause Laënnec's cirrhosis.

Because many cases are latent though relatively uncommon, any patient with a palpable liver or spleen should have a Wassermann test. A mass in the upper right quadrant with symptoms of lithiasis or cholecystitis may be operated on by mistake without a Wassermann or antiluetic treatment.

In from 10 per cent to 15 per cent of cases the blood Wassermann may be negative. Antiluetic treatment reduces the symptoms. Blood findings undergo wide variation. Leukocytosis with relative lymphocytosis and eosinophilia occur in some, and secondary anemia without leukocytosis as well in others. The blood Wassermann is positive in up to 85 per cent of cases.

Tests of hepatic function are of value in prognosticating the outcome in all forms of syphilis of the liver with the exception of the gummatous type.

O'Leary in 1930 found repeated estimations of the serum bilirubin, bromsulfalein retention, blood urea and the van den Bergh reaction to be the most valuable tests, especially in well-established exacerbations of hepatitis and in cirrhosis. O'Leary noted that if the bromsulfalein test was performed and extended over periods of eight to ten months, clinical evidences of cirrhosis developed within one or two years.

Due to the large functional reserve and marked regenerative power in late hepatic syphilis, frequent repetition of the tests may be necessary over a long period of time before appreciable change is noticed.

IRGANG, in a recent comprehensive discussion of problems in liver lues, believes that every time a patient reacts
(Concluded on page 602)

THE PRESENT STATUS OF

Diphtheria Immunization

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IN this paper an attempt will be made to evaluate and to elucidate certain debatable points involved in diphtheria immunization, such as:

1. The choice of preparation and dosage as determined by
 - (a) its simplicity of administration
 - (b) its safety
 - (c) its ability to produce prompt and lasting immunity
2. The optimum age at which this immunization should be carried out
3. The advisability of performing the Schick test on all children previous to inoculation and at subsequent stated periods.

Diphtheria immunization is usually carried out by the employment of one of three agencies: (1) Toxin-antitoxin, (2) Formaldehyde toxoid, (3) Alum precipitated toxoid.

Toxin-Antitoxin

THIS was the first preparation used. Three doses are usually administered by the intramuscular route at weekly intervals. At times, severe reactions occurred and were ascribed to the horse serum present. For the past several years antitoxin obtained by inoculating sheep or goats with toxin has been used for the purpose of avoiding these reactions. This, however, has not entirely fulfilled expectations.

Another unsatisfactory feature more recently ascribed to the toxin-antitoxin is the increase of cases of diphtheria during the first six weeks following the injections. This increased incidence during this period is explained by the so-called "negative phase." This is a tem-

porary decrease in immunity and is said to develop

in from six to twelve days following the beginning of the injections; it has a duration of from six to eighteen days.

From fifty to seventy-five per cent effectiveness has been reported with the use of three doses. Recently, four doses have been given with negative Schick tests in seventy-four per cent of cases at the end of one year, and in ninety-two per cent at the end of two years. In adults, about fifty-five per cent negative Schicks have been obtained with the use of three doses and eighty-two per cent with five doses, indicating that adults are not so easily immunized. The immunity produced by toxin-antitoxin lasts at least six years in ninety per cent of cases and possibly for life.

Formalin Treated Toxoid

BECAUSE sensitization to horse serum occurred with the use of toxin-antitoxin, research was carried out to obviate this difficulty. As a result toxoid was developed. This is simply diphtheria toxin detoxified by means of formalin without impairing its antigenic properties.

A review of the literature reveals three variable factors: (1) The size of the individual doses, (2) the number of doses, (3) the time interval.

The original technic was to administer five-tenths cc., three weeks later one cc. and fifteen days later from one to one and one-half cc. It was found that with three doses, one hundred per cent immunity was obtained from within five weeks to two months. The chief disadvantage in this technic is that it is impossible to carry out immunization to completion with such a long interval in the majority

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of cases. Since then, single doses of one and one-half cc., two doses of one cc. and again three doses have been used. It seems that the total amount of toxoid is important. An analysis of available figures seems to show that a single dose of one and one-half cc. is totally inadequate, that two doses of toxoid each containing one-half cc. or two doses of a total one and one-half cc. do not give immunization in a large enough percentage to warrant continued use.

On the other hand, two doses of one cc. each or three doses give the best results. It is therefore concluded that at least a total of twenty antigenic units or two cubic centimeters of commercial toxoid are needed for immunization.

Ninety-three and three-tenths per cent immunity has been obtained in adults with the use of three doses, while in children ninety to ninety-five per cent is obtained with two doses and one hundred per cent with three doses.

The time interval has varied from seven days to two months, but it appears that the best results are obtained at three-week intervals. It is said that immunity begins to develop within one week. Reports on the permanency of immunity vary. Some say it persists up to four years, while others report seventeen per cent loss of immunity at the end of six months. This has been explained by the absence of more or less frequent antigenic stimuli from diphtheria bacilli in the environment, which causes a drop in the antitoxic titer of the serum below the Schick level.

Reactions

SEVERE reactions such as soreness and edema of the entire upper arm accompanied by fever have been reported. These have occurred in the older child and adult while the younger child has suffered slight or no reactions. Because of this it was thought unsafe to administer toxoid in children over seven years of age. This is not true, inasmuch as such reactions are usually predictable and preventable. It has been found that severe reactions are likely to follow where marked pseudoreactions occurred in the original Schick test or where a history of having had diphtheria has been obtained.

Some commercial preparations contain a skin test solution and it is recom-

mended that toxoid be given only to those who show negative skin reactions. This is not necessarily true. If individuals who show any indication of developing possible reactions are given one-tenth cc., twenty-five hundredths cc., five-tenths cc. and one cc. toxoid at intervals of one week, instead of three to four weeks, it will be found that these reactions will be avoided.

Alum Precipitated Toxoid

ALTHOUGH toxoid appears to have greater immunizing powers than toxin-antitoxin, nevertheless there is no greater simplicity of administration. Research was then carried out to develop the ideal, that is, a preparation that would confer prompt and lasting immunity with a single injection. As a result alum precipitated toxoid was brought forward. This is toxoid precipitated by alum, which was supposed to increase its antigenic power to such extent that one dose would be sufficient.

The principle involved is that of continuous antibody stimulation afforded by the slow absorption of small amounts of concentrated antigen. It has been stated that the immunity induced by the injection of antigen in a non-immune animal does not depend entirely on the total amount of antigen injected. The time spacing of the stimulus or the continuance of the stimulus is of great importance.

With this principle in mind one dose of alum precipitated toxoid has been used. Very favorable reports have appeared. From ninety-five to ninety-eight per cent immunity has been reported within three to six weeks. Here, then, appeared to be the ideal preparation. A follow-up of these cases has revealed a loss of immunity in seventeen per cent of cases within six months and fifty-eight per cent within two years, indicating that a single dose of one cc. confers almost immediate immunity, which, however, is of very short duration.

A noted authority who uses this preparation exclusively insists on two doses one or two weeks apart and that at least a total of fifteen antigenic units must be administered. Others believe that the best results are obtained when two doses are given four months apart. With the use of two doses immunity has been noted for at least two years.

Reactions

NO reactions have been reported in children under two, while in older children sterile abscesses and reactions consisting of chill, fever and convulsions beginning four hours later have been noted. Adults have reacted with headache and fever accompanied by a large area of local redness with induration and regional adenitis. These reactions may be prevented by starting with one-tenth cc. and following the scheme as outlined under formaldehyde toxoid.

The Optimum Age

AUTHORITIES differ as to the most favorable age at which vaccination against diphtheria should be carried out. It has been found that a passive immunity in infants interferes with the development of antitoxin in response to vaccination with diphtheria toxoid. Such vaccination, therefore, should not be done in young age groups without preliminary Schick testing. If this cannot be done routine immunization might well be withheld until from nine to twelve months, when practically all babies will have lost their passive immunity. This holds true for city children. In country districts, routine immunization may be carried out at six months inasmuch as a large percentage of mothers are positive, in contrast to city mothers, who are as a rule immune to diphtheria.

Schick Testing

IT appears that Schick testing should be carried out preliminary to inoculation for two reasons: (1) Because it has been shown that immunity will not be produced if a passive one exists and (2) in order to obtain more accurate and valuable statistics as to the efficacy of any one preparation.

The Schick test should be performed

subsequent to injection to determine if immunity has been produced and, in the light of conflicting reports as to the duration of immunity, it appears advisable to repeat the test every year thereafter for several years.

Conclusions

FROM this brief discussion certain conclusions can be drawn:

- (1) A single dose of alum precipitated toxoid produces prompt but temporary immunity and at least two doses in a total of fifteen antigenic units at an interval of two weeks must be used to produce prolonged immunity. To date this has been known to last two years.
- (2) A single dose of formaldehyde toxoid is totally inadequate. Two doses of a total of two cc. of commercial formaldehyde toxoid are at least necessary to produce adequate immunity and three doses are still better. It has been said that immunity lasts at least four years.
- (3) Three doses of toxin-antitoxin appear to be inferior to either of the toxoids, but four doses will produce ninety-two per cent immunity, but then only after two years.
- (4) All preparations are safe to use at all ages provided one starts with small doses in those likely to suffer reactions.
- (5) The most favorable age for immunization appears to be between six and nine months in children living in country districts and nine to twelve months in those residing in the city.
- (6) Schick testing should be carried out preliminary to vaccination and every year thereafter for several years.

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- Toomey, John A., City Hospital, Cleveland, Ohio.
- Haynes, Herbert A., 4458 West Madison Street, Chicago, Ill.
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PRENATAL CARE

Someone has said that the development of prenatal care has been America's outstanding contribution to the science of obstetrics. Be that as it may, it is a fact that great emphasis is being placed upon the necessity of proper care for the pregnant woman, and that gratifying results are being obtained as a consequence. However, we are still far from obtaining the ideal for which we should strive, which is proper supervision of every pregnant woman throughout pregnancy, labor, and puerperium. The goal of minimum mortality and morbidity can be reached only by realizing these objectives.

E. L. King, M.D. In *Tri-State Medical Journal*, May, 1938.

RADIOTHERAPY

There are perfectly good reasons for this slow acceptance of the tenets of a new art of healing. In it have been involved intricate problems of physics—almost unbelievable new precepts. For example the idea that a ray of energy

could destroy a cancer in the interior of the body without affecting particularly the surrounding normal structures was new. So were the development of expensive new machines, and the utilization of radium, a newly discovered element. A quite extraordinary cooperation between the surgeon, the pathologist, the radiation expert, the physicist, the chemist, the biochemist and others was required. All this has involved a somewhat new and intricate setup in hospitals specially equipped to perform this function.

Benjamin S. Barringer. In *Bulletin of The New York Academy of Medicine*, May, 1938.

A NEW DAY IN PUBLIC HEALTH

Every honest effort against syphilis brings prompt and profitable returns. The program has passed beyond the conversational stages. Communities have begun action for themselves; they have begun to demand action from their elected representatives. Tomorrow's children need never know the shadow of syphilis.

Thomas Parran, M.D. In *Journal of Social Hygiene*, March, 1938.

MEDICAL TIMES, DECEMBER, 1938

A Renal Function Test **FOR OFFICE PRACTICE**

KIDNEY

function tests are almost exclusively limited to hospitalized patients. The requirement of

bed rest, a special diet, and the frequent collection and measuring of urine specimens has prevented the use of the valuable renal dilution and concentration tests on office patients.

The following modification overcomes these objections by:

(1) The use of equipment easily obtained locally.

(2) A simple diet measured by the patient or a member of the family with the usual kitchen utensils.

(3) A neat way for the patient to measure and collect the urine specimens.

(4) Direct determination by the physician of the specific gravity of each urine sample without transfer from the collection bottle.

(5) The additional clinical value in the use of a meal containing 100 grams of carbohydrate as a glucose tolerance test to determine the presence of an asymptomatic glycosuria.

The urine measuring cup, an aluminum 2 cup (1 pint) size, was purchased in a department store. As illustrated, this cup makes a convenient container for the specimen bottles, which are standard screw cap dispensing bottles, 4½ inches long and 1 inch in diameter. These bottles allow the use of a regular urinometer bulb for specific gravity reading.

The directions to the patient may be written in longhand, typed, or printed on a sheet of paper or on both sides of a 5" by 8" card.

The "Directions for the Kidney Function Test," are illustrated on the pages herewith.

PAUL CHADBOURNE ESCHWEILER, M.D.

Assistant Attending Physician Brooklyn Hospital
and Methodist Episcopal Hospital

Brooklyn, N. Y.

Discussion

THE most reliable clinical sign of renal insufficiency is a tendency to a fixation of the specific gravity near 1.010.

The dilution test measures the maximum activity of the glomeruli.

The concentration test measures the maximum activity of

the tubules.

A normal individual eliminates the three pints of water in 2 to 4 hours. The individual portions of urine may be as much as 500 cc., with a dilution of 1.001 to 1.002. As renal insufficiency progresses there is a proportional increased time of elimination beyond 4 hours, the individual portions become smaller, more uniform in amount and the specific gravity tends to become fixed near the isovalue of 1.010.



The concentration test in a normal subject shows a quick drop in output

—Concluded on page 576

KIDNEY FUNCTION TEST

NAME DATE

To be done on a day off duty or on a Sunday so that you may remain in bed or in a comfortable chair during the whole test day. You may read, sew, or write.

This test should not be done on a hot day when there will be excess sweating.

If directions are not followed, the results of the test may indicate a damaged kidney in a normal individual.

Bot. No.	Time voided	Amount in ozs.	Spec. Grav.	Sug.	Alb.	Micro.
1						
2						
3						
4						
5						
6						
7						
8						

1. 8:00 A.M.: void and discard the specimen.
2. Drink 3 pints of water (6 glasses) in a period of one half hour (2 glasses every fifteen minutes).
3. Void at about 9:00 A.M. in measuring cup (1 cup = 8 ounces); note the amount in ounces and the exact time of voiding. Record these figures of the amount and time in the table above, in the space in line with "Bottle Number 1." Fill specimen bottle number "1" with the urine in the measuring cup. Discard the remaining urine.

Front of Card

4. Void at about 10:00 A.M., and in a like manner record time and amount and fill specimen bottle number "2."
5. Void at about 11:00 A.M.: record time and amount and fill specimen bottle number "3."
6. Void at about 12:00 M.: record time and amount and fill specimen bottle number "4."

No Liquids Are To Be Taken Except As Listed Until The Next Day

7. At 12:30 P.M. eat the following. Be accurate with the amount.
Two (2) cups cooked cream of wheat or farina. With this cereal have a sliced small banana, 2 (level) teaspoons of granulated sugar and 2 tablespoons of coffee cream.
Two (2) zwieback or two (2) graham crackers or three (3) lemon snaps.
8. Void at about 3:00 P.M.: record time and amount and fill specimen bottle number "5."
9. Void at about 6:00 P.M.: record time and amount and fill specimen bottle number "6."
10. At 6:30 P.M. eat the following meal:
Four (4) ounces ($\frac{1}{4}$ lb.) ($3" \times 2" \times 1"$) of lean meat, fish, chicken or cheese.
One cup baked or boiled potato or cooked rice.
One cup of canned green peas or one-half ($\frac{1}{2}$) cup fresh green peas.
One "square" of butter (two level teaspoons).
One medium sized raw apple or $\frac{3}{4}$ cup apple sauce (cooked without sugar).
Five ounces of milk.

(DO NOT ADD SALT OR PEPPER)

11. If necessary void before going to sleep, record the time and amount and fill specimen bottle number "7."
12. The following morning, on arising, pass the final voiding of urine, record the time and amount and fill specimen bottle number "8."
This completes the test.

Please Return All Specimen Bottles and the Graduated Container

Back of Card

MEDICAL JURISPRUDENCE

Edited by Gustave J. Noback, Ph.D.

Secretary of the Society
of Medical Jurisprudence

"MANY people learned the use of firearms during the World War." In Germany, a considerable number of ex-soldiers kept possession of their firearms after the War, although this was forbidden by law. Thus the number of injuries due to firearms "increased enormously" after the War and the revolution, and the author had opportunity to perform many autopsies on men and women killed by firearms, including cases of suicide, murder or manslaughter, accidents and riots.

In death caused by firearms, the medicolegal expert must answer the following questions: What was the cause of death? What kind of bullet and weapon had been used? What were the distance and direction of the shot? Was the death caused by suicide or homicide, accidentally or in self-defense?

Death may be sudden from injury by firearms, if the bullet penetrates the heart or a large blood vessel or an important part of the brain. If the bullet injures the vital centers in the region of the fourth ventricle, death may be almost instantaneous. If the bullet injures the heart, the result depends upon the amount of blood lost, and the rapidity of the blood loss. Wounds in the heart may heal "with a surgical opera-

tion or without it," and the person may live for many years. If the blood loss is not too rapid, the wounded person may be able to walk a few steps before falling; but he soon loses consciousness and dies. But as a rule, when the bullet penetrates the heart or a large blood vessel, the wounded person is incapable of any movement and dies within a few minutes. The cause of death is acute anemia due to loss of blood; the loss of

70 per cent. of the blood is always fatal; even a loss of a third of the blood, if rapid, may be fatal. In some of the fatal cases seen by the author, the blood loss was only 1,200 to 1,600 c.c., which accumulated in the pleural cavities and the pericardium. If the blood pours first into the pericardium, the cardiac movements are restricted and the vital centers of the brain do not receive sufficient oxygen, but death may not occur for

an hour or more. The varying effects of heart wounds are shown by the following 2 cases: A woman thirty years old was shot in the breast; she was able to cry, "I am wounded," and to hurry into the next room, but died a few minutes later. The bullet had perforated the left ventricle of the heart and the left lung; 1,700 c.c. of blood were present in the pleural cavities. A young man, nineteen years of age, was shot through the heart at close range; he fell to the

FATAL WOUNDS BY FIREARMS

FROM THE

Medicolegal POINT OF VIEW

GEORG STRASSMANN

Former Director Institute of Forensic
Medicine, University of Breslau

Breslau, Germany

An Abstract

* The original article was read before the Society of Medical Jurisprudence on November 8, 1937, at The New York Academy of Medicine, New York, N. Y.

ground and died almost instantly. The aorta and right ventricle were perforated; the pericardium was filled with blood, and the left pleural cavity contained 1,200 c.c. of blood.

If the bullet perforates the larger internal organs, such as the liver and spleen, acute anemia from blood loss combined with shock is the cause of death. Death from such injuries is not always immediate, however. In one instance, two men received similar gunshot wounds, both having injuries of the liver and intestines. The younger man fell immediately after the shot and died in fifteen minutes. The older man jumped from his chair, calling "I am shot," and hit one of his attackers in the face; he died three hours later, operation having failed to save his life. If the bullet penetrates the brain, even if large areas of brain tissue are destroyed, the wounded person loses consciousness immediately, but may live for some time afterward. Aspiration of blood into the lungs or the presence of blood in the stomach is proof that the person was alive after the brain injury. Sometimes the wounded person is able to walk after a shot has perforated the brain, or, in the case of suicide, is able to inflict a second wound upon himself. It is a much discussed question, whether in the case of suicide, the person always drops the weapon when death occurs. The author has not found this to be the case.

In injuries due to firearms, less immediate death than that due to acute anemia, shock or destruction of the vital centers of the brain may be caused by secondary infection—sepsis, peritonitis, pneumonia, meningitis, tetanus or gangrene.

In cases of suicide, the gun is usually found lying near the body. But in cases of murder or manslaughter, where the gun is not found, a search for the bullet is made; the caliber, weight, and special peculiarities of the bullet indicate the type of weapon used. It may be possible to identify the gun used by markings. If the bullet is not found, the autopsy findings do not give definite evidence as to the caliber of the bullet.

A bullet hole in the skull may be of the same diameter as the bullet or often is larger. Holes in the clothing and in the skin are usually smaller than the bullet, owing to the elasticity of the tissues. Bullets from a gun of larger caliber usually pass through and out of the body more easily than bullets from a smaller gun. Yet, this is not the invariable rule. The author has found the larger bullets in the body, while the smaller bullets passed through it, although the distance and direction of the shot were similar. X-ray "snapshots" aid the search for the bullet. If the x-ray is not available, it may be necessary to search a considerable time before the bullet is found; but it is "very unsatisfactory" to complete an autopsy without finding the bullet, unless there is a definite wound of exit.

In deciding upon the distance at which the shot was fired, the wound and the clothing around it must be carefully studied. Also, if the gun has touched the skin at the moment of firing, some of the skin tissue can be found on the barrel, by examining scrapings under the microscope. In such cases the hole through which the bullet enters is large with lacerations "in the form of a cross or a star." Powder is found, not on the skin, but under the skin and in the muscles, and sometimes even in the deeper tissues. If the gun touches the clothing when the shot is fired, the explosion of the powder tears holes in the clothing. If the gun is more than 1 cm. distant from the skin, the hole where the bullet enters is small. If the distance is between 1 and 50 cm. there are particles of powder on the clothing or on the skin around the hole where the bullet entered. The black powder formerly used caused a burn on the skin, the clothing, or the hair if the shot was fired at close range, but the modern powder does not cause burns. If the clothing has been pierced by the bullet, all the powder remains on the clothing. A test for gunpowder on the clothing may be made as follows: The dust from the clothing near the wound where the bullet entered is collected in a white china cup; and tested with diphenylamine and concentrated sulfuric acid; if any particles of powder are present, they show a blue color. The

with an increased specific gravity to radius over which the powder spreads increases with distance, while the amount of powder present decreases. If the shot has been fired at a distance of more than 50 cm. no powder is found near the hole of entrance; it is impossible to tell at exactly what distance the shot was fired.

TO determine the direction of the shot, the site of the entrance of the bullet, its course in the body, and wound exit must be studied. As has been noted, if the shot is fired from close range with the gun in contact with the skin or clothing, the wound entrance is comparatively large. Usually the wound of exit is larger than that of entrance, especially if the bullet has perforated a bone and carries bone splinters with it, or if the bullet emerges broadside and not "nose-first." But there are exceptions to this rule, and the hole where the bullet entered and the wound of exit may be very similar in appearance. A brownish circle is often seen surrounding the hole of entrance; this circle becomes darker after death if the wound has not been dressed. But a similar circle may be found at the wound of exit. In the clothing the hole of entrance may show a small black circle, if the bullet has carried some burned powder with it. Examination of the fibers of the cloth under the microscope in such cases shows them to be covered with small black particles. This indicates that the bullet has entered at this point, but not from a close range. If the bullet has passed through the clothing before entering the body, cloth fibers are found underneath the skin near the wound of entrance, but not near the wound of exit. The finding of such cloth fibers is valuable evidence in regard to the direction of the shot. A political leader was shot in 1919 by

soldiers; they claimed that he had tried to escape and had not stopped at their bidding. Fibers of cloth were found only in the bullet holes in the man's back, not in those in the breast, proving that the bullets had entered the back. In the internal organs the wounds of entrance and exit may have the same shape if the lungs or the heart are penetrated; or the heart may be destroyed entirely, if the shot is fired at close range, as in a case of suicide. If the liver or spleen is injured, the hole of exit is larger than the hole of entrance, and shows lacerations of the border. In gunshot injuries of the skull, the wound of entrance on the outside of the skull is usually of the diameter of the bullet and is smaller than the hole of exit; there are rare exceptions to this rule. In one case where the bullet entered the skull sideways, both the holes of entrance and exit were larger than the caliber of the bullet; the edges of both were "ragged," and the skull was shattered.

The question of whether a death is suicide or murder is often difficult to decide. If the gun is found near the body, and the shot was fired at close range into the forehead, into the right temple (or if the person is left handed into the left temple), or into the breast, it may be suicide. But, on the other hand, the circumstances may be such that murder cannot be excluded. It has been shown that a man can fire two shots into his own body, so that the presence of more than one wound of entrance does not necessarily exclude suicide. If the alleged murderer claims that he shot in self-defense, the range at which the shot was fired must be considered; it cannot have been very great. There must also be definite evidence that the bullet entered the body of the aggressor from the front.

RENAL FUNCTION TEST

—Concluded from page 571

with an increased specific gravity to 1.030 or more. With renal insufficiency, the specific gravity does not increase that much, and in proportion to the degree of lost function the value tends to become fixed near 1.010.

A normal person should not show sugar in any of the specimens voided after the meal.

General References:

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11 PLAZA STREET.

CANCER

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John M. Swan.

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EXECUTIVE SECRETARY, NEW YORK STATE COMMITTEE
OF THE AMERICAN SOCIETY FOR THE CONTROL OF CANCER

IN this Department (MEDICAL TIMES AND LONG ISLAND MEDICAL JOURNAL, October, 1937, 65:518) we published the first paper in this series.

There were 1818 admissions to the Park Avenue Hospital during that year. Thirty-nine of these were cases of cancer and of suspected cancer (2.14 per cent).

Eight of these cases proved not to be cancer and were reported in the former contribution. There were ten cases of cancer of the female breast.

Case number
16,997

Female, aged 61 years. Admitted February 17, 1928, in the service of Dr. Charles W. Hennington.
ADMITTING DIAGNOSIS:

Chronic cystic mastitis, or benign tumor. **HISTORY:** Tumor in the breast for two years; lately has been more conscious of it and thinks it may have grown larger. No discharge from the nipple. **PHYSICAL EXAMINATION:** Tumor in the outer quadrant of the left breast, freely movable, skin not adherent; no axillary involvement. Operation advised six or seven weeks before admission to the hospital.

URINE: Negative.

OPERATION: February 18, 1928.

Left breast removed; no axillary involvement and axilla not cleaned out. In gross section, diagnosis is in doubt; might be cancer, but there are three growths. They are somewhat cystic and contain chocolate fluid and so diagnosis might be cystic adenoma.

HISTOLOGY: Colloid carcinoma. (Fig. 1)

PROGRESS:

Uneventful recovery. Temperature 100.2° second day after operation. Discharged nine days after operation.

Between March 13, 1928, and February 4, 1929, this patient had six treatments with Röntgen irradiation, a total of 1,285 milliamperes minutes. 180 to 200 kilovolts; at 50 cm.

Filter, 0.5 Cu., 1.0 Al. Milliamperes, 4. **FINAL DIAGNOSIS:** Colloid carcinoma of the breast.

1938. This patient is living and has no clinical sign of recurrence.

Case number 17,316

Female, aged 55 years. Admitted April 16, 1928, in the service of Dr. W. Douglas Ward.

ADMITTING DIAGNOSIS: Carcinoma right breast.

HISTORY: Four or five months ago

CLINICAL STUDIES IN CANCER—II

The Cancer Material Observed in a Small General Hospital in 1928.

2.—Cases of Cancer of the Breast



Fig. 1

Case No. 16,997. Colloid Carcinoma of the Breast.

began to notice soreness in the right breast; two weeks ago noticed a mass in the breast; not tender, two inches in diameter, not adherent, no palpable axillary lymphnodes. The patient has had a double iritis since 1926.

PHYSICAL EXAMINATION: Small goiter, retraction of nipple and discharge from the nipple. Systolic murmur all over the heart.

BLOOD: Chloro-anemia (color index, 0.75)

BLOOD CHEMISTRY: NPN., 30.0; sugar, 133.

WASSERMANN: Plus-minus (October 5, 1927)

URINE: Albumin and pus.

OPERATION: Right breast removed and axilla cleaned out.

HISTOLOGY: Adenocarcinoma.

PROGRESS: Fever to 101.6° after operation, pulse to 120. Otherwise normal. The attending physician considered the iritis to be toxic in character and of gastro-intestinal origin. Discharged convalescent sixteen days after operation.

This patient was reported alive and without recurrence on September 22, 1933, by her physician. In 1936 the patient's son reported that she had had the left breast removed by a surgeon in another city. In 1938, October 27th, the

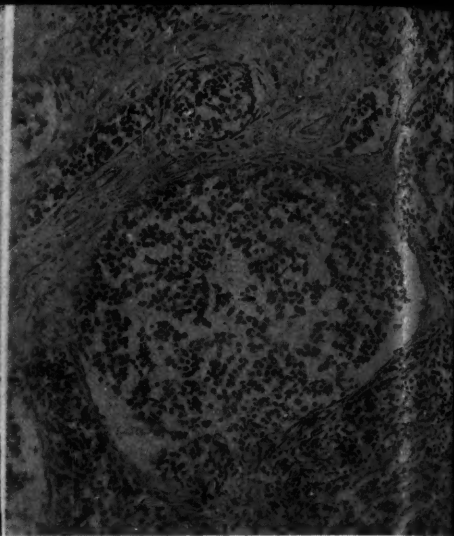


Fig. 2

Case No. 17,495. Primary Tumor.

son reported as follows: "Would say that my mother is in very good health up to this time, since the second operation." We have had no report on the nature of the tumor in the opposite breast. However, there is no evidence of recurrence of the tumor of the right breast removed in 1928.

FINAL DIAGNOSIS: Adenocarcinoma of the breast.

Case number 17,495

Female, aged 61 years. Admitted May 18, 1928, in the service of Dr. W. Douglas Ward.

ADMITTING DIAGNOSIS: Suspected cancer of the breast.

HISTORY: A small amount of bloody discharge, paroxysmally, from the left nipple. Slight pain and moderate tenderness on pressure. Small nodular area around the nipple of six to eight weeks' duration.

PHYSICAL EXAMINATION: Left breast slightly nodular and tender at the nipple. Dimple to right of the nipple.

WASSERMANN: Negative.

URINE: Albumin in one specimen and pus in two.

OPERATION: Mastectomy. A small lump directly below the nipple and some enlarged glands in the left axilla removed.

HISTOLOGY: Carcinoma of the breast. (Fig. 2).

PROGRESS: Nausea and vomiting, occasional cough with grayish expectoration after operation. Fever to 101° the day following the operation. Discharged convalescent thirteen days after operation.

FINAL DIAGNOSIS: Carcinoma of the breast.

This patient was readmitted as Number 23,772 on November 6, 1931. There had been a return of the tumor at the lower angle of the scar about two months before. She was losing weight, complained of anorexia and weakness. The tumor was about the size of a lemon. There were no pathological signs discovered on physical examination of the lungs. X-ray study of the chest showed no involvement of the bony chest wall. There was evidence of metastatic disease in the middle and lower lobes of the right lung.

Under gas and oxygen anesthesia the tumor was removed November 7, 1931. Pathological diagnosis: Carcinoma (Fig. 3). She was discharged convalescent seven days after admission. The patient died January 7, 1932, of carcinoma of the breast with metastasis in the lungs, three years and 234 days after the first admission.

Case number 17,675

Female, aged 59 years. Admitted June 28, 1928, in the service of Dr. George H. Gage.

ADMITTING DIAGNOSIS: Carcinoma of the breast (right).

HISTORY: Noticed a discharge from the right nipple in January, 1928, with a lump in the breast. First applied for advice a week ago (Five months later). Slight leukorrhea.

PHYSICAL EXAMINATION: Right nipple retracted. A hard mass occupies three-fourths of the breast over which the skin is movable. Tumor not adherent, no axillary glands palpable.

URINE: Pyuria.

OPERATION: June 29th. Mastectomy, axillary dissection.

HISTOLOGY: Medullary carcinoma.

PROGRESS: Postoperative fever to 101° the first day; slight nausea and vomiting. Discharged convalescent in

sixteen days. This patient died October 5, 1929, one year and eighty-three days after discharge from hospital of "Carcinoma of the Breast and Stomach".

FINAL DIAGNOSIS: Medullary carcinoma of the breast.

Case number 17,689

Female, aged 59 years. Admitted July 1, 1928, in the service of Dr. W. Douglas Ward.

ADMITTING DIAGNOSIS: Carcinoma of the breast (left).

HISTORY: Five months ago noticed a crease in the skin beneath the left nipple, with a lump beneath it. The lump has grown slowly.

PHYSICAL EXAMINATION: Left breast contains a growth about the size of an English walnut below the nipple, with retraction of the skin. No palpable glands.

URINE: Albumin and pus.

OPERATION: July 2d. Left mastectomy and axillary dissection.

HISTOLOGY: Scirrhus carcinoma.

PROGRESS: Postoperative fever to 100.8° on the third day. Uneventful except for pain in the arm. Discharged convalescent sixteen days after operation. This patient was readmitted July 8, 1929 (No. 19,544) for lymphatic obstruction in the left arm and hand. There was no evidence of recurrence or of metastasis then. The scar was dissected from the axillary vessels and pads of fat were placed between the vessels and the skin. On December 19, 1930, she was known to be living without recurrence. Since then she has been lost sight of.

FINAL DIAGNOSIS: Scirrhus carcinoma of the breast.

Case number 17,944

Female aged 28 years. Admitted August 21, 1928, in the service of Dr. Guy B. Van Alstyne.

ADMITTING DIAGNOSIS: Benign tumor of the breast (L).

HISTORY: Noticed a lump in the breast in May, after being accidentally struck. No pain.

PHYSICAL EXAMINATION: A hard, somewhat irregular mass in the left breast about 8 cm. in diameter, immediately surrounding and involving the nipple. Not attached to the muscles; but

adherent to the skin. No retraction of the nipple. No palpable glands. Has a colloid goiter.

URINE: Few pus cells.

OPERATION: August 22d. Radical mastectomy with axillary dissection. Glandular involvement in the axilla.

HISTOLOGY: Papillary duct adenoma of the Breast (suspicious) (Fig. 4).

PROGRESS: Postoperative nausea and vomiting, otherwise uneventful. Discharged convalescent ten days after operation.

On December 9, 1930, we had a report from the surgeon that the patient was living; but that she had a recurrence in the subclavicular glands, which he removed on September 4th. On December 22, 1932, the surgeon reported that the patient had been operated on by another surgeon October 29, 1938: this patient is living with no evidence of recurrence.

FINAL DIAGNOSIS: Carcinoma of the breast.

Case number 17,981

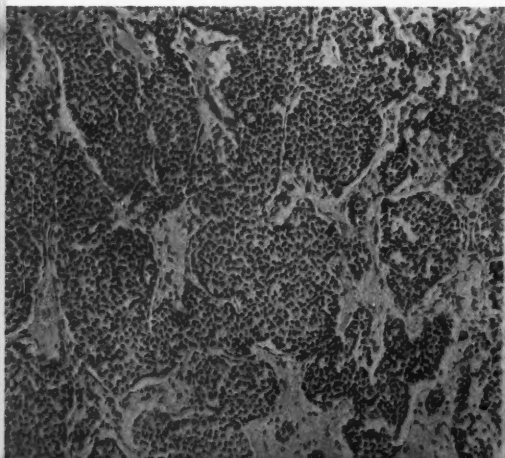
Female, aged 66 years. Admitted August 28, 1928, in the service of Dr. John G. Hart.

ADMITTING DIAGNOSIS: Carcinoma of the breast (right).

HISTORY: In 1921 had radium treatment for carcinoma of the uterus with involvement of the bladder. Incontinence ever since. About a year ago felt a lump in the right breast, not painful; no discharge.

Fig. 3

Case No. 17,495. Recurrence of the Primary Breast Carcinoma.



PHYSICAL EXAMINATION: Hard mass, freely movable, about the size of a lemon, in the right breast; nipple retracted, skin over the tumor red and adherent; no axillary or supraclavicular lymphnodes palpable. No mass in the left breast; but the nipple is retracted.

PELVIC: Induration of the tissues about the vagina, admitting only one finger through the introitus, rather free bleeding. Small speculum showed vulvar and vaginal tissues markedly sclerotic and contracted. There is a steady flow of urine from the urethra. Mucous membrane reddened; cervix red and sclerotic; no evidence of ulceration.

RECTAL: Mass in the cervical region. Body of the uterus could not be satisfactorily located on account of obesity.

BLOOD: Simple anemia (Color index 0.97), leukocytosis (12,920).

BLOOD CHEMISTRY: NPN. 27.2; sugar 208.3.

WASSERMANN: Negative (1926).

URINE: Albumin, few epithelial cells.

PROGRESS: Nervous and restless at night, weakness and depression. Fever to 100.6°. Refused operation. It was thought the uterine carcinoma had not recurred and she was advised to have a mammectomy. Discharged at her own request unimproved five days after admission.

About five weeks after discharge the patient was admitted to another hospital where the breast was removed and the axillary contents dissected out "for the

Fig. 4

Case No. 17,944. Papillary Duct Adenoma of the Breast (Suspicious).



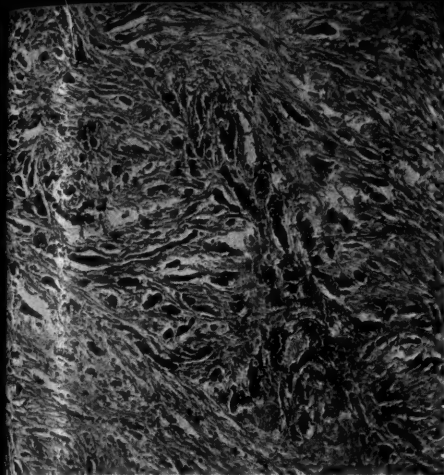


Fig. 5

Case No. 18,358. Scirrhous Carcinoma of the Breast.

purpose of preventing ulceration." Here histological study and a diagnosis of carcinoma were made. The patient died on June 10, 1929, 286 days after admission.

Inquiry to the New York State Institute for the Study of Malignant Disease resulted in information that the patient had been seen at the Clinic of the Institute April 4, 1924. She had an epithelioma which apparently originated in the anterior lip of the cervix. The vaginal wall was involved and there was an atresia of the upper end of the vagina. Biopsy from the cervix and the bladder showed no evidence of malignancy. The patient received "100 per cent depth dose over the pelvis by means of x-ray and 1214 mg. hours of radium into the cervix and uterine cavity." In August, 1924, the notes said: "The whole pelvis and vagina are infiltrated with tumor. She voids almost continually."

We thought on the examination of this patient that the pelvic condition was inflammatory, the result of deep x-ray and radium irradiation.

FINAL DIAGNOSIS: Carcinoma of the breast.

Case number 18,207

Female aged 76 years. Admitted October 16, 1928, in the service of Dr. Warren Wooden.

ADMITTING DIAGNOSIS: Tumor or cyst of the breast (R).

HISTORY: In April, 1928, the patient

noticed a small swelling of the upper part of the right breast. It was quite painful and was noticed when moving the arm. The swelling seemed to disappear until June when it reappeared and started to grow. Always painful to the touch.

PHYSICAL EXAMINATION: A tumor the size of a lemon in the upper part of the right breast.

URINE: Trace of albumin and pus.

OPERATION: October 16, 1928. Under 1.0 per cent novocaine the tumor was removed.

BLOOD: Erythrocytes, 5,030,000; leukocytes, 14,950; hemoglobin, 90 per cent; lymphocytes, 19.0 per cent—2,840. NPN. 32.2 mg; sugar 153 mg.

HISTOLOGY: Carcinoma simplex.

PROGRESS: Uneventful. Discharged convalescent the next day.

The patient died May 13, 1929, from metastasis to the spine and probably to the brain. She had a convulsion before death. Death 209 days after operation.

FINAL DIAGNOSIS: Carcinoma of the breast (R).

Case number 18,358

Female, aged 40 years. Admitted November 22, 1928, in the service of Dr. George H. Gage.

ADMITTING DIAGNOSIS: Carcinoma of the breast (L).

HISTORY: Lump in the breast for

Fig. 6

Case No. 18,439. Carcinoma of the Breast.



eighteen months. Slowly growing larger and for the past two weeks has been sore.

PHYSICAL EXAMINATION: A hard mass two by two inches in diameter in the upper, inner quadrant of the left breast, not tender; adherent to the skin, movable over the deep tissues. Small goiter.

BLOOD: Leukocytosis, 11,400.

BLOOD CHEMISTRY: NPN. 28.5; sugar, 149.

URINE: Albumin, pus.

OPERATION: November 24th. Mastectomy and axillary dissection.

HISTOLOGY: Scirrhus carcinoma (Fig. 5).

PROGRESS: Postoperative fever to 101.4° second day after operation.

Discharged convalescent twelve days after operation.

On December 22, 1931, the surgeon reported that this patient had a small recurrence in the scar. The radiologist reported a small localized carcinomatous ulceration in the scar. No glandular metastasis; no chest metastasis. December 30, 1932, the patient was living and in good health.

May 20, 1933, the ulcer has entirely healed. No evidence of metastasis; no chest metastasis.

August 28, 1933, there were a "few small, superficial nodules in the region of the scar." Between March 14, 1929, and August 28, 1933, the patient had received 3,520 MAM of deep X-irradiation. 170-190 KV and 50 cm. distance. 0.5 cm. Cu., 1.0 cm. A1 Filter.

FINAL DIAGNOSIS: Scirrhus carcinoma of the Breast (L).

This patient died of pulmonary metastasis, five years and 75 days after discharge.

Case number 18,439

Female, aged 60 years. Admitted December 10, 1928, in the service of Dr. Guy B. Van Alstyne.

ADMITTING DIAGNOSIS: Carcinoma of Breast (R).

HISTORY: Tumor in breast for eight months. History of injury about two months before that. Operation advised when first seen, but refused. A week before admission decided to have the operation because the growth was getting larger.

PHYSICAL EXAMINATION: Medium sized, hard, nodular tumor about three by four inches attached to the skin but not to the ribs. No palpable glands in the axilla.

URINE: Albumin, pus.

OPERATION: December 11th. Mastectomy and axillary dissection.

HISTOLOGY: Very rapidly growing carcinoma. (Figure 6).

PROGRESS: Postoperative fever to 101°; pulse to 100. Considerable bloody drainage. Discharged convalescent eight days after operation. On September 7, 1933, the patient reported that she has "not needed a doctor these five years." The surgeon reported that he had examined the patient on September 6th and that there was no evidence of recurrence. October 28, 1938: this patient is living with no evidence of recurrence.

Summary and Comment

Age	Duration of Palpable Tumor	Palpable Metastases	Histology	Status in 1938
61	2 years	No	Colloid Carcinoma	Living, no recurrence or metastasis
55	5 months	No	Adenocarcinoma	Living. The other breast removed 2 years ago
59	5 months	No	Medullary Carcinoma	Died in 1 year, 83 days
59	5 months	No	Scirrhus carcinoma	Lost
61	8 weeks	No record	Carcinoma	Died in 3 years, 234 days
28	3 months	Yes	Papillary duct adenoma, (suspicious)	Living, without recurrence
66	1 year	No	No operation	Died in 286 days
76	6 months	No record	Carcinoma	Died in 209 days
40	18 months	No record	Scirrhus carcinoma	Died 5 years and 75 days after discharge
60	8 months	No	Very rapidly growing carcinoma	Living, no recurrence or metastasis

FINAL DIAGNOSIS: Carcinoma of the breast.

Four of these patients presented small goiters.

Here are ten cases of carcinoma of the breast. The patients had known that tumors were present for from eight weeks to two years, and yet they had neglected the logical treatment. These cases bear out the observation of Bloodgood that further improvement in the mortality from cancer of the breast is to be looked for, not from improvement in surgical technique, but in the more prompt cooperation between the patient and the surgeon, once the tumor has been discovered.

Ersine (2) says that the prospect of securing a surgical cure in cancer of the breast is favorable in from 65.0 to 90.0 per cent of the cases in which the tumor is confined to the breast; and that it is hopeless in from 80.0 to 90.0 per cent in those cases that present axillary metastasis. A review of his cases shows that the fatal ones presented an interval of from three months to two years between the discovery of the tumor and operation.

Ducuing (1) concludes that cancer of the breast is a very grave condition because the operation is almost never undertaken at the beginning of the disease. Further, in his experience, only 3.0 per cent of the patients are free from enlarged glands when they first consult the surgeon.

Harrington (3) says that the presence or absence of lymphatic involvement at the time of operation is the most important factor in the prognosis. There are few, if any, single tumors of the breast in which the delay in the institution of treatment is safe for the patient, and

few physicians care to assume the responsibility of determining the presence or absence of malignancy by the physical characteristics of the tumor. A radical operation is never justified unless the diagnosis of malignancy has been made, and the safest method is by removal of the tumor by a wide excision, immediate microscopic diagnosis, with radical operation immediately if the microscope indicates that the growth is carcinomatous.

Nine of these patients were operated on. In two, mastectomy only was done. As the microscope showed the tumors to be malignant a subsequent axillary dissection should have been done. In six the radical operation was done, and in one of these there is a note that metastasis to the axillary lymphnodes was demonstrated at operation, although it was not discovered before operation. The tenth patient refused operation. The treatment in the hospital after operation varied from one to sixteen days, an average of 10.9 days. It would seem wise to insist upon the patient remaining in the hospital at least fourteen days after the radical operation for carcinoma of the breast. It would also seem that the operation records ought to state definitely that axillary metastases were looked for at the time of the operation and found or not found.

Four of these patients (40.0 per cent) are known to be alive and without recurrence or metastasis ten years after discharge from the hospital. Allowance must be made for one of these patients who had a mastectomy in the opposite breast at least eight years after the radical mastectomy. One has been lost sight of. Five (50.0 per cent) are known to have died of cancer.

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3. Stuart W. Harrington. *Jour. Amer. Med. Assn.*, January 19, 1929. 92:208.



SULPHANILAMIDE

While it appears that sulphanilamide (para-aminobenzene-sulphonamide) has been established as a valuable therapeutic agent in combating infections due to hemolytic streptococci and some of the Gram-negative cocci, its ultimate range of use rests largely upon the severity and frequency of toxic effects.

Daniel L. Dozzi. In *American Journal of Medical Sciences*, June, 1938.

MENTAL HYGIENE NOTES

Complaint Problem: As formulated by referring physician, was "drunkenness." The husband wished help not only because of his wife's frequent intoxications, but also for change of his own reactions to her: loss of love and strong hate; at times feels like giving up—fears he cannot carry on his job; fear of taking to drink as an escape from mounting worries; fear of what wife might do to herself and also what he might do. Waves of hostility against wife for "bold-face lying" and public intoxication which is most embarrassing to him. Disgust with her behavior at times which he feels is malingering or hysterical. The complaint problem as expressed by patient concerns itself with loss of her husband's love for which she craves; jealous resentment to flirtation with other women; gambling; incivility to son and patient.

Present Illness: Although inter-personality reactions of patient and husband have not been entirely satisfactory since marriage seventeen years ago, home life hung together fairly well until eight years ago when patient discovered evidence pointing to unfaithfulness. Pursuing this clue, she discovered that he was infatuated with another woman and he then "put it up to" patient as to gaining his freedom. This was denied husband. Since that time patient has never really been the same, but, on the contrary, she and husband have been growing farther apart. At the same

time, more or less close association with carefree women who were not of the home type facilitated social alcoholic imbibition and contributed to a growing inefficiency in home duties. It was felt by the family physician that patient took to

periodic drinking as an escape for loss of husband's affection, sympathy, and tender recognition. At times she would go five or six weeks without taking to alcohol. Then some irritation or argument would ensue or patient suspected husband was paying attention to other women and this would spring the trigger for another alco-

holic tailspin. It was a hard blow to patient's ego when husband insisted upon twin beds in order that he might obtain sufficient rest and sleep.

About a month ago patient was found by her physician in a state of "hysterical paralysis." Dabs of mercurochrome were recognized on her face to denote bleeding. This manner of simulation greatly angered husband.

For the entire past week patient has been on an alcoholic spree characterized by irregular hours of leaving and returning home, loss of sleep, and inability to take responsibility for care of her children. She has threatened jumping out of the window but so far has not made any suicidal attempts. The husband is so wrought up about the whole affair that he is willing to do anything to regain reasonable peace in his home life. However, he cannot bring himself to the point of feeling any af-

CASE NOTES IN EXTRAMURAL PSYCHIATRY

**Case VIII: Periodic and
Chronic Alcohol Addiction
with Hysterical Features in a
38-Year-Old, Married, White
Female**

**FREDERICK L. PATRY, M.D.
Albany, New York**

fection for his wife again.

Personal History: Patient is the youngest of five children. Birth and development normal. Personality is described as outgoing, likeable, a good mixer, and active in social affairs. She is decidedly extroverted but has been thought to have a tendency to "show off" and dramatize herself. With the exception of an operation for a lipoma in the right upper mammary region (Feb., 1932) and an appendectomy with sterilization at the age of 30, there have been no other serious illnesses. Menstruation began at age 11 and has been regular since. Since marriage, however, there has been a definite pre-menstrual lowering of spirits. In July, 1937, there occurred menstrual cramps and small clots.

With the exception of the pre-menstrual depression, patient's mood cycle has been within normal latitude until 1929, when there developed a reactive depression upon discovery of husband's infidelity. Coincident with this change in mood rhythm occurred the beginning of periodic alcoholic imbibition. A contributory factor in this regard has been an increase in suspiciousness and jealousy of her husband to the point that whenever he leaves town patient does not seem to be able to "take it," and resorts to inviting certain women to her apartment in order to indulge in alcoholic drinks. There is usually an emotional let-down sprung by frustration preceding alcoholic retreats.

HIGH school education, following which she assisted in her mother's home with the housework until marriage at the age of twenty-three after six months' courtship. At that time husband was employed as a traveler and was only home week-ends. He is described as of pyknic type, popular, good mixer, but temperamental and quick-tempered. He is strongly opinionated and quite rigid. Whereas he is of the sportsman and athletic type, enjoying golf as well as bridge, patient has practically no recreational skills and dislikes cards. Her hobby interests are of the home type, knitting and fancy work. She also has been very helpful in furthering philanthropic and educational movements such as the Parent-Teachers' Association and

American Legion efforts in raising money. The husband, an engineer by profession, is of a decidedly higher intellectual caliber than his wife. Partly on this basis there has been very little common ground for discussion of mutual problems in home or social life. Indeed, the latter has taken the turn where husband's friends are not those of his wife; they usually take him to bridge or golf at so much per point. On the other hand, patient's allowance has been very meager, partly because husband feels he cannot trust her with larger amounts, owing to temperamental drinking and an impulse to buy whatever might be fancied. There has been no attempt to live within a planned and mutually considered budget. Patient bitterly resents her financial restriction and as a result has run up bills which have led to anger reactions.

There are two children, a son, age fifteen, educationally adjusted and taking a prominent part in cadet activities. He and his mother are very closely interdependent and he usually gets what he wants through his mother. There is an adopted daughter, age four, who came into the home with the object of bringing peace and happiness in view of the growing inter-parental disharmony. This good-intentioned attempt, however, has not had a profound effect in developing maternal drive to the extent that the home would make for sufficient happiness. Without husband's affection nothing seems to really matter.

Whereas husband is of an independent, self-reliant, and domineering type, patient has been overdependent upon her parents, particularly her mother and a maternal aunt. When things do not go to her liking she seeks the shelter and consolation of her mother.

Family History: Father died at age 74, five years ago. He was given to Saturday night drinking bouts. He preferred remaining at home although under encouragement he would join a male group. He is said to have been happy and well adjusted. Patient has been deeply attached to him all her life. Mother, age seventy-one, is in impaired health. This is utilized to keep patient in close touch with her. She has been of an over-repressive type and had never

allowed patient to leave home prior to marriage. There are two brothers, one of whom is said to be a periodic drinker, based upon unhappy marital relations. The other brother is single, lives with his mother, and has "no vices."

Physical and Neurological Examination: At the time of the original consultation and examination patient lay in bed in an acute alcoholic intoxicated state. She felt drowsy and only with considerable effort did she respond to questioning. She presented a large body frame, well-developed, well-nourished, athletic type, dark complexioned. There was a fairly well developed hemianesthesia starting below right ear and downward. There was periodic jerking and twisting of the right side, as well as some pain on passive manipulation of extremities of right side. Husband felt that patient's hysterical reaction protests were precipitated by frustrating her desire to attend a social meeting that night. Physical and neurological examinations otherwise normal.

Mental Examination: It was somewhat difficult to arouse patient from a lethargic toxic state, but when she perceived questioning she was cooperative. Face was somewhat swollen and speech thick. Answers relevant. Moderate spontaneity. Mood was objectively depressed with a characteristic hurt and confused background. Content of thought revealed a trend of hurt resentment for love deprivation. "I always wanted to be a good sport. I feel that I am to blame, that I have failed. I can't take it." Thus alcohol seemed a way out from her unbearable anguish.

Patient bitterly protested that husband has stopped showing affection by tender caressing and there has been no coitus for at least six weeks. Patient pleaded warmly for a return to the double bed custom.

Sensorium clear. Intelligence low average with respect to abstract and relationship thinking. She is, however, bright and socially adequate with those of similar interests. However, in the presence of a more intellectual group, patient becomes hypercritical and withdraws from the conversational situation.

Diagnostic Formulation: Chronic and periodic alcohol addiction with hysterical features. This type of mental illness is understandable as a personality maladjustment, a false strategy of meeting the shock of disappointment in her husband. On the basis of an emotionally immature, over-dependent woman we find her first escape into alcoholism coincident with a reactive depression to the conflict arising in infidelity and loss of husband's affection. The hysterical reaction features are unconscious mechanisms for winning husband's sympathy and affection. There is also a malingering trend (utilization of mercurochrome to simulate bleeding) which has a similar motive. Alcoholic indulgence also serves the purpose of furnishing a vicarious means of punishment of and retaliation against her husband for loss of affection and his extraneous heterosexual interests. Through socially embarrassing him she unconsciously hopes that he may be won over to a more sober way of regarding her as a woman who demands his entire affection and attentions. Besides the escape and retaliative symbolic function of indulgence, patient also thereby regains emotional support through identification with her father, upon whom she is deeply fixated and who likewise took to periodic drinking to excess.

Prognosis: Guarded in view of somewhat restricted intellectual assets and also a rigid attitude of the husband which defies mollifying his emotional feelings of bitter hate and disgust for his wife.

Treatment: The acute phase of this condition was handled by the exhibition of sedatives and hypnotics in order to counteract insomnia and also to aid in breaking the cycle of imbibition repetition. Elimination was furthered by saline laxatives. In view of patient's inability to retain food, the diet intake was restricted to fluids at first. Abstinence from further alcohol intake was insisted upon. Environment was controlled in order to further rest through quiet and freedom from argumentation, moralizing, and other measures which would stir up negative reactions in patient. Warm baths were used for relaxing and sleep producing qualities.

Reassurance was utilized in order to build up patient's confidence that the present attack could be successfully weathered, and that later recurrence of such unhappy states in all probability could be prevented, provided cooperation with insight could be inoculated.

In about ten days' time the patient was sufficiently free of toxic influences for one to approach the psychotherapeutic task on an analysis-educational basis. It was pointed out that alcohol addiction is merely a symptom of personality maladjustment which in turn pivots upon a false strategy of meeting critical stresses and strains. A discussion of patient's conflicts and frustrations made for recognition and clarification of contributory factors to the defense mechanisms which unfortunately chose the alcohol medium. Gradually insight dawned, with the assistance of interpretation and suggestion, that imbibition served a multiple purpose: (1) retaliation or getting even with her husband for turning his affections toward other sources and thus depriving her of what she considered her rightful returns; (2) numbing of consciousness of pain associated with loss of "face," personal pride, and social prestige by virtue of her husband's unfaithfulness; (3) recapturing of earlier emotional supportive values of her life through identification with father and brother who likewise resorted to alcohol addiction on occasion; (4) addiction so eased patient's conscience that she was able to have her fling, so to speak, by regression to the homosexual level illustrated by close emotional relationships with those of her own sex during periods of intoxication; and (5) self-punishment for unconscious guilt feelings.

In time, patient came to realize more and more adequately that her more or less unconscious muddled ways of meeting her complexes and conflicts were not only an unhealthy technique of living, but also fraught with tremendous hazard

to her physical, emotional, and social health. It became apparent that it was too big a price to pay, and besides, it was not bringing positive results. This led to the construction of a new program of living, a widening of one's understanding and insight horizon which allowed for more satisfying and effective inter-personality relationships and growth in social security. To this end, interest in club and welfare activities was encouraged. Such participation acted as substitutive and sublimatory factors in gaining more solidarity in personality functioning. Living for her children as a primary objective rather than her own emotional needs fed the very important mental health objective of altruistic endeavor. Instead of directly attacking her husband for dwindling of affections, indirect attempts in winning him over toward greater tenderness and love feelings were espoused through not only making home more attractive, but through common ground of interest in her children's welfare and plans for present as well as future needs. More conjoint types of social and recreational opportunities were planned for and amicably talked over between patient and husband. Moreover, the husband was given insight into the motives of his own unhealthy change of attitude and behavior with respect to his wife and family, so that he too, in time, cultivated more conventional and common sense methods of family and social life.

Patient received some help on the endocrine and gynecological level relative to dysmenorrhea and pre-menopausal emotional lability. The progress notes illustrate that through the succeeding months patient made a happier home and social life adjustment, and this was materially facilitated through spending much of her time at the family summer camp, which afforded health, recreational, and social opportunities.

214 STATE STREET.



"BIOLOGICAL ENGINEERING"

Modern medicine has become so complex that there is hardly another science which it does not touch at some point.

The chemist, the physicist, the biologist, even the astronomer and the engineer, all contribute to the growing store of medical knowledge.—Editorial. In *New York Medical Week*, April 16, 1938.

ASSOCIATED PHYSICIANS OF LONG ISLAND

Annual Meeting of Associated Physicians of Long Island to be held on January 28, 1939 in Brooklyn, N. Y.

THE annual meeting of the Associated Physicians of Long Island will be held in Brooklyn, N. Y., on Saturday, January 28, 1939. The meeting will take place in three different places as follows:

All day, clinical program of papers, demonstrations, clinics and operations at Norwegian Hospital, and luncheon as guests of the hospital.

2 to 4:30 Scientific program of papers written and read by staff members of Norwegian Hospital.

4:30 Annual meeting and election of officers in the assembly room of Norwegian Hospital.

5:30 Dedication and unveiling of a plaque in Kings County Medical Society Building commemorating the founding of the Associated Physicians of Long Island in Brooklyn.

6:30 Annual dinner at the Montauk Club, Brooklyn.

The Norwegian Lutheran Deaconesses' Home and Hospital is usually known as the Norwegian Hospital. It is a high class general hospital of 200 bed capacity located at 4520 Fourth Avenue and maintains a registered school of nursing. The staff members promise a carefully chosen clinical program and welcome the association on its first visit to Norwegian Hospital. Luncheon will be served gratis to members who signify their intention of attending. The scientific papers, as usual, will become the property of this association and will be published in the *MEDICAL TIMES* as official proceedings.

The Associated Physicians of Long Island are a group of medical men who organized in 1898 and have maintained uninterrupted activity. The original organizational meeting was initiated and held in Brooklyn, so a plaque will be unveiled at 5:30 January 28, 1939 in the

Kings County Medical Society's building to commemorate this event. A bronze tablet in keeping with the plaques already dedicated in the building will bear the insignia of this association and a very simple dedicatory sentence. Dr. Joshua M. Van Cott and Dr. William Browning, charter members, will assist at the dedication.

The annual dinner at 6:30 will be held in the Montauk Club, which has been the scene of many enthusiastic gatherings of the Associated Physicians of Long Island in past years. We will be returning to the scene of treasured reminiscences for this dinner and in the privacy of this men's club it is hoped to recapture the fellowship anew which has always been the biggest feature of meetings of our association.

The scientific program at the Norwegian Hospital will consist of a group of brief papers to be read by the following staff members:

Dr. Francis P. Ferrer
Dr. Bernhard A. Fedde
Dr. George J. Brancato
Dr. Ernest A. Brooks
Dr. John A. Monfort

The after dinner speaker will be the Honorable Hugh H. Clegg, Assistant Director of the Federal Bureau of Investigation, that division of the Department of Justice famed for its work in combating kidnappers.



MEDICAL RESEARCH

The ultimate meaning or purpose of medical research is to rid men of diseases, to protect them from maladies with which they are threatened, to relieve them of discomforts once they are established.

Research as an Adventure

Science, very briefly, is a way of looking at nature, in so far as that is possible, exactly. Two aspects are involved—the natural phenomena themselves, and a way of looking.

Research is procedure. Research represents the effort men make to increase their comprehension. To discover what is true about anything is an arduous undertaking because, at the outset, so many things seem possibly correct. That is why research is an adventure.

Alfred E. Cohn, M.D., *Bulletin of The New York Academy of Medicine*, May, 1938.

MEDICAL TIMES, DECEMBER, 1938

Contemporary Progress

+ Neurology +

Biopsy Studies of Cerebral Pathologic Changes in Schizophrenia and Manic Depressive Psychosis

A. R. ELVIDGE and G. E. REED (*Archives of Neurology and Psychiatry*, 40:227, August, 1938) report the removal of cerebral tissue for biopsy from 19 psychotic patients, including 13 with schizophrenia, 5 with manic depressive psychosis and one with "so-called toxic encephalitis." Two specimens were taken from 7 patients, making a total of 26 specimens. These second specimens were taken one to two years after the first specimen. None of the patients showed any demonstrable physical illness when the specimens were obtained, and only 2 were in a deteriorated state. Sixteen control specimens were obtained from routine surgical material by a similar technique. In the psychotic patients, the characteristic change observed in the specimens of cerebral tissue was a swelling of the oligodendroglia cells in the white matter. This was of two types—with normal nuclei and with pyknotic nuclei. This change in the oligodendroglia cells may be general or patchy in distribution; it may be more intense in the deeper layers; it can evidently occur as a chronic process, as it was observed in the second, as well as in the first specimens, in these cases. This change in the oligodendroglia cells was present in marked degree in all but 3 of the 19 cases; in 3 cases it was present in mild degree and in 2 of these cases only in the second specimen. In the non-psychotic cases, swelling of the oligodendroglia cells was rarely observed, unless there was an inflammatory or degenerative process in the neighborhood. It was observed in 2 patients with status epilepticus who were mentally confused between seizures, but not in

a patient with status epilepticus who was mentally clear between seizures. In one patient it was present at the time of an epileptic seizure. In view of the changes observed in the oligodendroglia cells in psychotic patients, the authors suggest that the mental phenomena in such patients "are associated with massive physiologic disturbances in association and commissural fiber pathways in the brain," with the result that "impulses from different parts of the brain are interrupted, with consequent disturbance and loss of control in the intellectual, volitional, and emotional fields."

Vesical Abnormalities Associated With the Parkinsonian Syndrome

O. R. LANGWORTHY (*Archives of Neurology and Psychiatry*, 40:44, July, 1938) reports a study of the vesical function in patients with the characteristic parkinsonian syndrome. Some of these patients complained of frequency of micturition, but others had noted no disturbance of vesical function. In 17 patients studied 15 showed some abnormality of vesical function. The resting intravesical pressure tended to be high, and in certain patients this was high both with bladder emptied and when it was filling. In most cases the capacity of the bladder was decreased below normal; in only one of the patients studied was it greater than normal. The stretch reflex in the muscle was not unusually hyperactive. It is noted that in the patients with the parkinsonian syndrome, the changes in vesical activity were not exactly similar and did not indicate a sharp localization or limitation of pathological changes to one group of cells or fibers; in this they differed from vesical changes observed after injury of the corticospinal tracts. From his study of these cases, the author concludes that both the increased intravesical pressure and the decreased capacity of the bladder in parkinsonism result from changes in the tone of the

muscle of the bladder wall—a hypertonus.

Treatment of Epilepsy with a Synergistic Combination of Phenobarbital and Belladonna

A. E. LOSCALZO (*Journal of Nervous and Mental Diseases*, 88:500, October, 1938) reports a study of the therapeutic effect of phenobarbital combined with belladonna in the treatment of epilepsy. Fifty patients were studied, but 18 were eliminated from the test, as the examination indicated some complicating or possible definite etiological factor; in the remaining 32 cases the diagnosis of "idiopathic" epilepsy was established. For the first twenty-six weeks of the study these 32 patients were treated with phenobarbital — $\frac{1}{4}$ to $\frac{1}{2}$ gr. three times daily—and more than half the group received in addition daily doses of a mixture of potassium bromide 7.5 gr. and chloral hydrate 7.5 gr. During this period, the total amount of phenobarbital taken by these patients was 8,690 gr. The number of seizures was 804, or an average of approximately 25 seizures per patient. This medication produced lethargy and sometimes somnolence in almost all cases. In the second twenty-six week period, these same patients were given $\frac{1}{2}$ to one tablet three times daily of a mixture containing $\frac{3}{4}$ gr. phenobarbital and 1/250 gr. of levorotatory belladonna alkaloids per tablet. The dosage depended upon the number and severity of the seizures. No other medication was given and the patients were not aware

of any change in the treatment except that those who had been given the bromide-chloral mixture knew that this had been discontinued. In this period the total dosage of phenobarbital was 6,690 gr. for the 32 cases; the total number of seizures was 612, an average of 19.1+ per patient. Only a few patients given the largest doses (one tablet three times daily) complained of lethargy or somnolence. About 40 per cent of these patients stated that their convulsive seizures

were definitely less severe. These findings indicate that the belladonna alkaloids definitely increase the therapeutic action of phenobarbital in epilepsy, so that fewer seizures occur with smaller doses of phenobarbital when combined with belladonna.

COMMENT

In the drug treatment of this convulsive disorder, phenobarbital takes precedence. Efforts in connection with other drugs have been made before. Ephedrine sulfate plus has its advocates. In the short series above, the author feels quite hopeful. It is our feeling that the number of cases is too small to draw favorable conclusions.

H.R.M.

Some Uses of Diallylmalonylurea In Psychiatry

G. D. Woodward (*Journal of Nervous and Mental Diseases*, 88:324, September, 1938) notes that in neuropsychiatric work it is often necessary to administer a hypnotic or sedative without the cooperation of and often against the will of the patient. The drug must therefore be given by injection. Of the common sedatives used in such cases, morphine

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and allied compounds are more analgesic than hypnotic in action and also have a tendency to cause constipation and to induce habit formation, so that the author considers them "poorly adapted" for use in psychiatry. Hyoscine hydrobromide given by injection is a good hypnotic but may cause a rapid fall in blood pressure and collapse or "objectionable vasomotor reactions." Many of the barbiturates available for parenteral use do not keep well in solution so that a fresh solution must be made each time the drug is used. He has recently used diallylmalonylurea (dial with urethane), which is available in a stable, sterile solution and is given by deep intramuscular injection. He has found that this drug gives good results in various types of psychoses from the "mildly or moderately disturbed" patient who is unable to sleep to the patient with acute mania. The dosage varies with the patient's condition; in the milder cases a 3 gr. dose at bedtime may be sufficient; in the most severe cases, a 3 gr. dose may be given at two to four hour intervals, but not more than 15 gr. in a twenty-four hour period. No untoward effects have been observed. In a small group of catatonic schizophrenic patients, the intravenous administration of diallylmalonylurea, in amounts of 6 c.c. of the solution (9 gr. of the drug), caused the patients to become more lucid, active and talkative for a time and then gradually go to sleep. After their awakening from this sleep, no change was observed in the catatonic state.

COMMENT

Another safe hypnotic has been given a clinical trial. This report is quite hopeful. It is our belief that sedatives used frequently should be varied from day to day to produce the best results.

H.R.M.

Stovarsol in the Treatment of General Paralysis

L. Marchand (*Presse médicale*, 46:1216, August 6, 1938) reports the treatment of 111 cases of general paralysis. None of the patients had been given malarial treatment previously. Stovarsol was injected subcutaneously

three times a week until 45 gm. had been given; 0.5 gm. was used for the first two injections; after that 1 gm. was given in 10 c.c. of distilled water. Patients were kept in bed for the first weeks of the treatment. This series of treatments was repeated, as indicated, at intervals of three weeks to one month. Of the 111 patients treated, 71, or 66 per cent., were so greatly improved as to be discharged from institutional care; they are kept under medical supervision as out-patients at one of the Paris hospitals, and the treatment continued. Twenty-six of these 71 patients were discharged after the first series of treatment; another group of 26 patients required only two series; only 2 patients required five series of treatment. In 17 patients, the blood reaction became entirely negative; but the spinal fluid became completely normal in only 4 cases. The Wassermann spinal fluid reaction became negative in 10 cases. The most frequent favorable change in the spinal fluid was the reduction of the lymphocyte count, which returned to normal in 60 per cent. of these 71 patients. Of the 71 patients discharged from institutional care, only 9 have relapsed and been re-admitted; of these 9 patients, 5 had not had any further treatment; and 3 had had insufficient follow-up treatment; one had had treatment with other antisyphilitic drugs but not with stovarsol. Of the patients not improving sufficiently to be discharged from the institution, 10 have shown definite improvement in their condition and are employed in the institution. Fifteen patients showed no improvement under treatment; and 15 have died in the course of the treatment, 9 from some intercurrent disease and 5 from the advance of the general paralysis; 4 of these died in the first month of the treatment. Untoward reactions to the drug were few and slight.

COMMENT

The results reported are startling in the optimistic note implied in the statistical analysis. If these same results are obtained by other workers, stovarsol certainly should be given a thorough clinical trial. Up to the present time artificially induced hyperpyrexia has produced by far the best results.

H.R.M.

+ Physical Therapy +

Roentgen Treatment of Plantar Warts

W. C. Popp and John W. Olds (*Radiology*, 31:219, August, 1938) note that in 1933, Leddy and Johnson reported a series of 100 cases of plantar warts treated with the Roentgen rays at the Mayo Clinic, in which follow-up study showed 76 cures. Most of these patients lived near the Clinic and had the advantage of frequent examinations and repeated treatments when indicated. The authors report a series of 91 cases treated at the Clinic by the same method in 1934 and 1936. These patients lived at a distance and did not return to the Clinic after the initial series of treatments; information in regard to late results was obtained by a questionnaire. Of these 91 patients, 58, or 63 per cent., reported complete cure; 18, or 19 per cent., no benefit; 6 reported cure after further treatment elsewhere; and 6 partial or temporary relief. Of the 58 patients who were cured, 40 required only one treatment, 11, two treatments, 5, three treatments, and 2, four treatments. The average interval between the beginning of treatment and the disappearance of the lesions in these cases was six weeks. In this series the same technique was used as that employed by Leddy and Johnson: Unfiltered radiation, 80 kv. and 6 ma. with a target-skin distance of 16 inches (40 cm.). A threshold erythema is produced with these factors in six minutes (400 r) and the usual initial dose was 18 minutes (1,200 r). A lead foil screen was used to protect the surrounding tissues, the lesion being exposed through a hole punched in this screen, the lead foil being fitted closely around the border of the lesion. Comparing their results with those obtained in the earlier series (Leddy and Johnson), the authors conclude that better results are obtained in the Roentgen-ray treatment of plantar warts if the patients are kept under observation after the primary treatment, and treatment repeated if there is a recurrence after a temporary regression of the lesion. Recently the authors have

employed a different technique in the treatment of plantar warts, using 100 kv., with 0.5 mm. aluminum filter, a target-skin distance of 40 cm., and giving a dosage of 1,200 r. Their results in a few cases so treated indicate that this technique may give a higher percentage of cures than the method employed previously.

COMMENT

The action of roentgen rays on callus and scar tissue has been favored for many years. As stated in the above view, it is important that patients be kept under observation. It is safe to assume that in the hands of a man of lesser experience who attempts roentgen treatment of plantar warts, unfortunate results may occur. When such a result happens it vitiates a lot of good results.

The commentator, realizing that careful roentgentherapy is not to be decried, strongly favors the use of the Oudin high frequency current for electrodesiccation of these conditions.

N.E.T.

Fever Therapy at the Cleveland Clinic

W. J. Zeiter (*Archives of Physical Therapy*, 19:469, August, 1938) reports that at the Cleveland Clinic an all-metal cabinet with an electromagnetic induction coil is used for inducing artificial fever. The cabinet is heated to 110° F. before the patient is placed in it. A careful physical examination is made before accepting any patient for fever therapy. Patients are advised to take one or two teaspoonfuls of salt the day before treatment is to be given, and to increase the intake of fluid. Patients are given fluids during the treatment, but not in large quantities at any one time. Pantopon is used as a sedative in most cases, 1/6 gr. being given when the patient shows "excitement," usually when the body temperature reaches about 102° F.; in some cases the dose is repeated when the temperature reaches a higher level. Favorable responses to fever treatment have been observed in: Chronic gonorrhea and gonorrheal arthritis, various forms of neurosyphilis (paresis, tabes, taboparesis, optic nerve atrophy), rheumatoid arthritis, multiple sclerosis, undulant fever, neurorretinitis, and encephalitis. In gonorrhea treat-

ments are usually given every fourth day with a temperature of 106° to 107° F. for five to six hours. In neurosyphilis weekly treatments are employed, maintaining the temperature at 105° F. for five hours; these patients are also given chemotherapy. In arthritis the temperature is not raised above 104° F. for three to five hours. In undulant fever three treatments are given according to the method of the Mayo Clinic, the temperature being raised to 104°, 105° and 106° F. respectively for five hours.

COMMENT

This author mentions the preparation of the patient for fever, which is of great importance. Those who have used colonic irrigations before such treatments believe they add greatly to the patients' comfort because fever promotes metabolism and hence increases the absorption of toxins that may be remaining in the lower bowel.

It is the more general custom to give patients some sedative early in the fever bout instead of waiting until they begin to show restlessness and excitement.

N.E.T.

Low Voltage Wave Current In Vascular Therapy

E. Bettmann (*Archives of Physical Therapy*, 19:633, October, 1938) reports the treatment of peripheral vascular disease and muscular weakness or atrophy of the extremities by a low voltage wave current. The wave current is produced from a faradic current by a special apparatus; it produces "contractions and relaxations of muscles and tissue parts." A cuff electrode is employed; the extremity to be treated is first covered with a moist "orthopedic stocking" and then wrapped with the electrode cuff (metallic cloth). If only one extremity is to be treated, a folded electrode covered by a moist cloth may be used as an indifferent electrode. Treatments of twenty to thirty minutes each may be given as often as twice daily or not oftener than once in two days, according to the case. The author has found that in peripheral vascular disease, there is subjective relief, diminution of venous congestion and cyanosis; congestive edema is rapidly diminished; paresthesia is favorably affected; 4 cases of thrombophlebitis showed definite improvement

after four to six treatments. In cases of muscular atrophy, function is improved. Phlebitis and inflammatory diseases of the skin contra-indicate the use of this method.

COMMENT

The ability of the galvanic current to produce increased circulation and nutrition has been known for some time. This author contributes to the treatment of peripheral vascular diseases by bringing attention to this convenient method of home treatment, which is helpful to any other method instituted.

N.E.T.

Treatment of the Common Cold By Infra-Red Radiation

J. B. Sherman (*British Journal of Physical Medicine*, 1:322, September, 1938) reports the use of infra-red radiation in the treatment of common colds. A lamp is employed that produces rays of a wave length greater than 800 A.U. The eyes of the patient are protected by small "ovals" of cardboard covered with wash-leather; these protectors must be small enough to allow full exposure of the nose, frontal and maxillary sinuses. With the lamp at a distance of 2 feet, exposures of fifteen minutes are given. Patients are treated daily for several days if necessary, but some patients respond well to a single treatment. In 947 cases, there was only one that showed a skin reaction (reddening and swelling of the skin of the nose), and that was not of the serious degree. Of these 947 cases, 538 cases, or 57 per cent., were cured or much relieved. Those reported as "much relieved" stated that the nose felt much clearer, headache was relieved, and the discharge was much reduced or stopped. The best results were obtained in cases in which symptoms had been present for twenty-four hours or less. In these cases, complete cure was obtained in over 25 per cent., and much relief in 35 per cent. In cases in which only one treatment was given 20 per cent. were cured and 27 per cent. much relieved. In a few cases (45), symptoms had been present for more than one week, and in a number of these chronic sinusitis was a complication; while only 4 of these 45 patients (9 per cent.) were cured, 22, or 49 per cent., were

much relieved. The author notes that this method of treatment of the common cold is "easy, comfortable, and inexpensive," and might be useful for industrial establishments to reduce "the havoc wrought by the common cold."

COMMENT

Clinical experience has shown that infra-red radiation is capable of penetrating deep into the tissues and that the wavelengths that penetrate deepest are in the region of 8,000 A.U.

It is interesting that this writer has been careful enough to observe and collect results on this large group of cases, since practitioners in general treat a cold incident to another condition for which the patient originally came. Most colds are treated by home remedies.

In applications of phototherapy it is not necessary for the patient to feel great heat. What does the work is the amount of energy that penetrates into the sinuses and deeper portions of the nose. This penetration of light energy is disputed by some, but it should be remembered that putting a light within the mouth, as in transillumination, will show the penetration of light from within outward, so there is no reason not to believe that it penetrates to the same depth when applied to the outer side of the face.

Black body and non-incandescent sources of infra-red are most useful for treatment in these conditions. It is reported, however, that the greatest amount of infra-red in the region of 8,000 A.U. is generated by a Mazda filament in an ordinary electric light bulb. The combination of visible light, however, makes such a source not useful for these treatments.

N.E.T.

Electropyrexia

S. L. Osborne and D. E. Markson (*Annals of Internal Medicine*, 12:189, August, 1938) state that they have tried various methods of producing artificial fever by physical means, and are convinced that the use of the high frequency current "has a much wider margin of safety for the patient than external heating methods, and is far more comfortable." They prefer the use of a cabinet which is constructed almost entirely of polished metal and is light and portable. A large terry cloth is placed over the special mattress in this cabinet and folded so that the patient will lie on

the lower half and be covered with the upper half. The patient's head is outside the cabinet; a special opening is provided for rectal temperature readings and for attending to the patient's needs. The cabinet is heated to 110° F. before the patient is placed in it. After the patient is in the cabinet and covered with the terry cloth, the electromagnetic generator is turned on. When the rectal temperature reaches the desired level, the current is turned off and the required temperature maintained by regulation of the cabinet temperature by means of a variable resistance switch. The authors do not use sedatives before beginning treatment and rarely during the treatment; 1/6 to 1/4 gr. of morphine may be given when the current is turned off. The use of drugs that inhibit secretions or produce peripheral vasodilatation or excessive sweating should be avoided. Water with salt (0.6 per cent. sodium chloride) is given during treatment in small amounts, but frequently; fruit juices may also be given, especially to children. A nurse, familiar with "warning signs" of any dangerous reaction, is in constant attendance and a physician within call. The authors have found electropyrexia of value in the following diseases: General paralysis, especially in the earlier stages with sudden onset; not indicated in markedly deteriorated patients. Arthritis of the infectious (atrophic) type in younger patients; older patients with the hypertrophic or degenerative type of arthritis do not tolerate this form of fever therapy well; with younger patients a temperature of 103.5° to 104° F. may be maintained for four to eight hours. Multiple sclerosis in its earlier stages, maintaining a fever of 103.5° F. for six to eight hours with treatments given once a week. Asthma, in cases intractable to other forms of treatment; treatment is often given with the patient sitting up, reclining on a back rest. Chorea minor; for patients of this type with acute carditis the first treatment must be of shorter duration and at a lower temperature level than in uncomplicated cases.

COMMENT

The question of just which method of producing artificial fever is to be preferred is

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still unsettled and there are two schools of thought. The writers of this article belong to one school which centers largely around Chicago. Proponents of the other, the non-electrical method, seem to be on the West and East coasts.

This latter method is the use of humidified hot air which can be automatically controlled as to temperature and humidity. The outstanding advantage of this method is that a constant-reading, electrical rectal thermometer can be used, since the recording tip is not in any electrical field as would be the case if electromagnetic waves were used to induce the fever. Moreover, with the second method patients can be treated in their own beds. The electromagnetic method is not applicable except in specially made cabinets.

The indications for fever therapy mentioned are well accepted today. The advantages of this treatment, either alone or combined with chemotherapy, in gonorrhea and syphilis, have been definitely established. Time undoubtedly will show that artificial fever therapy is rational in other diseases.

N.E.T.

Public Health, Industrial Medicine and Social Hygiene

Scarlet Fever Control

E. R. Krumbiegel (*American Journal of Public Health*, 28:1096, September, 1938) reports the experience of the City of Milwaukee, Wis., with the use of the Dick test and immunization with scarlet fever toxin in three years (since March 1934). These studies were made during a time when the incidence of scarlet fever in the city was unusually high, reaching "epidemic proportions" in 1934 and 1935. Of 15,642 persons tested in 1934, 10,500 or 60 per cent. gave positive Dick reactions. Of these, 1,769 received no toxin for immunization; scarlet fever occurred in 226 persons in this group, or 12.77 per cent., up to March 12, 1937. Of the 3,731 positive reactors given the five standard doses of toxin, only 33, or 0.88 per cent., developed scarlet fever in the same period; the incidence of the disease was practically the same in a smaller group (674 persons) receiving four doses of toxin; but in groups receiving less than four doses, the incidence

of scarlet fever was higher, but still below that in the non-immunized groups. In testing persons who had recovered from scarlet fever it was found that the percentage of positive reactors was somewhat higher three years after recovery than one year after recovery—indicating some loss of immunity. The incidence of scarlet fever in this group was so low, although slightly greater than in persons immunized with five doses of toxin, that the use of the Dick test and immunization of persons giving a bona fide history of a previous attack of scarlet fever can hardly be justified as a public health measure. A re-test on positive reactors who had been immunized also proved to be of practically negligible value. The greatly decreased incidence of scarlet fever in positive reactors who were immunized by four or five doses of scarlet fever toxin, however, demonstrates the value of this procedure. For making the Dick test a culture filtrate free, or as nearly free as possible, of endotoxin should be employed.

COMMENT

The results of the author's experience, over a period of three years in the city of Milwaukee, employing the Dick test and immunization by means of scarlet fever toxin inoculations, tend to support the uniformly favorable results that have been obtained by others using the same technique. It should be pointed out, however, that this method of active immunization is still restricted to the protection of personnel, employees and inmates of hospitals and institutions. It is commonly employed in the protection of nurses and interns. Despite the favorable record with this method, public health authorities, as yet, generally do not advise mass protection with it as with diphtheria. There are several reasons for this attitude:

(1.) The mild character of the scarlet fever prevalent in recent years. Whereas mortality statistics relevant to scarlet fever of some 50 or 60 years ago indicate a mortality of approximately 40 per hundred thousand, the rate fell to 2 per hundred thousand, 20 years ago. A study of these statistics indicates that the case fatality rate has been declining on an average basis of 5 per cent per year. Scarlet fever epidemics studied in recent years have shown a fatality rate of .86 to 21 per cent. The present case fatality rate in the New England states is approximately 1 per cent and less.

(2.) The large number of injections re-

quired. The author of this paper points out that in his experience there was a decreased incidence of scarlet fever in positive Dick reactors who were immunized by 4 or 5 doses of scarlet fever toxin. Among individuals receiving less than 4 doses, a satisfactory proportion of protection was not shown.

(3.) It is not uncommon for severe reactions to follow one or more of the Dick toxin injections. More recently Veldee of the United States Public Health Service has on an experimental basis prepared a detoxified, concentrated and purified scarlet fever toxin which, in a limited experience, has shown great promise. With the Veldee scarlet fever toxoid method, graduated doses of the preparation are given at 3 week intervals. These have produced only slight local redness and swelling and no constitutional symptoms. Skin reactions of inoculated subjects, tested one month after the last dose, showed 80 to 90 per cent Dick negative. Re-tests performed as long as three years after the inoculations have shown equally good results.

M.L.G.

Typhus Fever In Pennsylvania

H. V. Flippin (*American Journal of the Medical Sciences*, 196:246, August, 1938) notes that typhus in its epidemic form has occurred occasionally in Pennsylvania in connection with the arrival of immigrants from Europe. But endemic typhus has been recognized in the State since 1911. Health department reports indicate that cases of endemic typhus are rare in Pennsylvania, as compared with the incidence of the disease in the neighboring states; but the author is of the opinion that the incidence of the disease is greater in this state than the official figures indicate. Endemic typhus occurs chiefly in the late summer and fall, and in cities; the clinical course and the exanthem indicate the correct diagnosis, but this must be confirmed by the laboratory test for the Weil-Felix reaction (specific agglutination with proteins X-19). This reaction is also positive for Rocky Mountain spotted fever, but this disease occurs chiefly in the late spring and in rural districts; the rash also is more widespread than in endemic typhus. The author has collected 30 cases diagnosed as endemic typhus from the literature and the records of the University of Pennsylvania Hospital; of these 29 occurred in

Philadelphia; the data indicate a focal infection in Philadelphia, but the information available is not sufficient to indicate the extension of the infection throughout the State. The author urges physicians in Pennsylvania to recognize the possibility of endemic typhus occurring in the State, and especially in Philadelphia, so that correct diagnosis and accurate reporting of cases may aid in the epidemiologic study of the disease.

COMMENT

In calling attention to the probable greater actual incidence of typhus fever in Pennsylvania and the likelihood of incompleteness of reports, the author is performing a real service. Clinicians of wide experience and training, whose work brings them in close affiliation with medical centers, agree that the occurrence of endemic typhus in the country is more frequent than is generally appreciated. It is not uncommon for cases diagnosed as typhoid fever, by general practitioners, to be sent into hospitals where subsequent study discloses the disease to be typhus fever.

Typhus fever has certain clinical characteristics, which by careful observation can be distinguished from other febrile conditions. Many workers have studied this disease in the clinic as well as in the laboratory. Among contemporary students, Zinsler, of Harvard Medical School, has made notable contributions to the increasing knowledge of this particular problem. While it has long been known that the disease is more likely to affect the foreign born, particularly those from certain European countries, little progress has been made in providing a satisfactory explanation. Typhus fever—as does Rocky Mountain spotted fever—belongs to the Rickettsia group of diseases. The Rickettsia are parasitic microorganisms which are found within the intestinal cells of certain insects. It is quite conceivable that the persistence of endemicity of this disease in the United States, even with the improvement in sanitation and hygiene by the elimination and control of insects and rodent vectors, can be explained by the possible presence of Rickettsia in the tissue cells of the host for many years before manifesting signs of activity.

M.L.G.

Health Hazards in the Dry Cleaning Industry

W. H. Cary, Jr., and John M. Hepler, Jr., (*American Journal of Public Health*, 28:1029, September, 1938) report a sur-

vey of working conditions in the dry cleaning industry in Detroit, Michigan, with special reference to the health hazards. The "investigation covered 97 dry cleaning plants and 828 'pick-up' stations." This study showed that the total number of dangerous substances used in dry cleaning and ancillary operations is far greater than has been supposed. Some of these substances have never been adequately investigated with regard to possible toxic properties. The use of chlorinated solvents or mixtures of such solvents with petroleum fractions for primary dry cleaning processes involves a definite danger from the inhalation of vapors; the use of Stoddard's Specification Solvent probably reduces this hazard to a minimum. In most cases where very volatile petroleum fractions (cleaner's naphtha, gasoline) were used, "unsafe concentrations" of the vapors were found. Fancy "spotters" are also exposed to a variety of solvent vapors, some of which are definitely toxic. Whatever type of solvent is used, some degree of dermatitis occurs on the hands and arms of workers in the dry cleaning process "almost without exception." There are other health hazards in the industry—excessive heat and excessive moisture, unnatural posture, tenosynovitis in hand pressers—but these appear to be of minor importance as compared with exposure to toxic vapors from the various solvents.

COMMENT

This paper is a valuable contribution to industrial hygiene as it concerns the health of workers in the dry cleaning industry. The findings of this survey in Detroit are, in all probability, an indication of conditions as they exist in the same industry on a nationwide scale. Quite properly the authors point out that there are a number of substances, now used in dry cleaning, the toxicity of which has not been determined. Respiratory, hematological, neurological, and dermatological conditions occurring in workers engaged in the dry cleaning industry can, in many instances, be traced to contact with the solvents and mixtures used. Much effort is yet to be expended in productive research to discover satisfactory solvents and mixtures which at the same time are free from toxicity and not hazardous to health.

M.L.G.

Incidence of Occupational Dermatoses and Their Causes

L. Schwartz (*Journal of the American Medical Association*, 111:1523, October 22, 1938) presents an analysis of the study of industrial dermatoses made by the United States Public Health Service in the basic industries, in comparison with state records and other surveys. This analysis shows that the incidence of occupational dermatoses in the United States is at least 1 per cent. for all industrial workers. Such dermatoses are most frequent in the metal industries, which account for 30 per cent. of all industrial dermatoses. Domestic and food handling industries rank second and third respectively, in furnishing cases of occupational dermatoses. The most frequent causes of occupational dermatoses are alkalis, petroleum products and solvents; next in order are plants, metals and metal plating acids, including chromic acid, dyes, rubber compounds and resins.

COMMENT

The result of this study is significant, in that it indicates an important fact, namely, that workers in the metal industries are more subject to dermatoses than workers in other occupations. Of particular interest is the frequency in order of the causes of occupational dermatoses as discovered by the author.

M.L.G.

Control of Syphilis In The Southern States

R. A. Vonderlehr (*Southern Medical Journal*, 31:863, August, 1938) notes that recent surveys of the incidence of syphilis in the United States have shown that the incidence of syphilis is higher in the South than in other parts of the United States. The fact, demonstrated in all these surveys, that the incidence of syphilis is higher among Negroes than among whites is of special significance in the Southern states because of their large Negro population. The surveys of facilities for the treatment of syphilis indicate that these are less adequate in the South than elsewhere. The surveys show that there are 254,000 persons in the Southern states constantly receiving medical treatment for syphilis;

and that annually 627,000 patients with syphilis in all stages come under treatment for the first time. As the optimum average duration of treatment for syphilis is one to two years, on the basis of the number of new cases annually, there should be one and a quarter million persons with syphilis under treatment at any one time, but the present facilities in the South provide for only 254,000, or 20 per cent. A recent questionnaire sent to the health departments of the 16 Southern states and the District of Columbia showed that there were 445 venereal disease clinics in this area—35.6 per cent. of all such clinics in the United States. Two of the state departments of health were furnishing anti-syphilitic drugs free for the treatment of all syphilitics; 11 other departments, for the treatment of indigent patients. All state departments perform serodiagnostic tests, but improvement in serologic technique is necessary in a number of these laboratories to obtain adequate diagnosis. Only two Southern states (Kentucky and Maryland) provide full time workers for case finding duty; and six other states provide part time workers. The expenditures for venereal disease control in the entire group of Southern states does not exceed a million dollars annually. These facilities, the author concludes, are "wholly inadequate to bring syphilis under control."

COMMENT

Vonderlehr's observations on the surveys in Southern states, with reference to the adequacy of facilities for the treatment of syphilis, are noteworthy. He points out that there is an evident lack of uniformity of control of this disease in the 16 Southern states and the District of Columbia. The findings, as revealed by the survey, show a definite need for raising to a higher plane the present policies of syphilis control in some of the Southern states.

M.L.G.

Syphilis Control In A Chemical Industry

G. H. Gehrman (American Journal of Syphilis, 22:623, September, 1938) notes that the syphilitic as a possible source of infection to his fellow employees is not a problem in modern in-

dustry, as there is not sufficiently close contact required by the industrial processes as such, and with modern sanitary equipment the common drinking cup and common towel have been eliminated. The Kahn test is used in the Du Pont Medical Division for blood tests, as it has been found that this test detects the majority of syphilitic cases. Blood tests are made on all new employees; yearly tests are made on employees handling chemical compounds that produce clinical manifestations similar to those of late syphilis; on employees handling food, cellophane or material used in connection with foods; other employees are advised to have yearly tests and many are "not only willing, but anxious" to have such tests. Employees with syphilis are excluded from work involving exposure to certain compounds that may aggravate their disease through effects on the cardiovascular or nervous systems; from exposure to substances that produce symptoms similar to the manifestations of late syphilis; and from handling food or cellophane used to wrap foods. Results of blood tests are confidential; no report is made to the employer unless an employee refuses to take treatment (this is very rare). Employees are first referred to their family physicians for treatment; if the physician refuses adequate antisyphilitic treatment, or makes a charge for such treatment greater than the worker can afford, or if the employee cannot attend a free clinic on account of working hours, treatment is provided through the company medical department. In this way the future health and working ability of the employee is protected, especially against the development of late manifestations of the disease.

COMMENT

It would be well if all modern industrial plants should follow the example set by such concerns as the DuPont industries, in the interest and regard shown for the health of their employees. As Gehrman points out in this paper, the medical division of DuPont, as part of its policy, requires blood tests of all new employees and yearly tests on employees coming in contact with chemical compounds, the effects of which might produce signs and symptoms similar to those of late syphilis. Where a system of careful

physical examination of employees and frequent laboratory tests is in order, coupled with satisfactory sanitary and hygienic standards and facilities, industrial plants are doing their part to prevent the transmission of syphilis among employees as well as to prevent aggravation of the condition should it already be found to exist. Unfortunately, such policies in plants are, at present, the exception rather than the rule. With the expansion in public health education it can be expected that ultimately a favorable effect will be exerted on industrial plants throughout the country.

M.L.G.

+ Ophthalmology +

Effects of Oxygen Deprivation On the Central Visual Field

J. N. Evans and R. A. McFarland (*American Journal of Ophthalmology*, 21:968, September, 1938) report experiments on normal healthy subjects who had been trained in other experiments involving oxygen deprivation and were therefore familiar with the procedure. The tests were made in a Barach portable oxygen chamber where gases, temperature, ventilation and humidity could be controlled. The visual fields were tested at three different stages of oxygen deprivation, corresponding to altitudes of 13,000, 17,000 and 21,000 feet. It was found that the visual acuity was but little, if any, impaired by these degrees of oxygen deprivation. The angioscotoma, however, showed a progressive widening with progressive oxygen deprivation until at the last stage the visual field was obliterated except for a region 8 degrees to 10 degrees about the macula. There was a considerable variation in the extent and rate of the widening of the angioscotoma, not only in different individuals, but to some extent in the two eyes of the same individual. These findings are of practical as well as theoretical importance. The test of the oxygen deprivation may reveal a latent defect in the retina, which is of special interest in testing air pilots. The loss of vision in glaucoma "follows very closely" the changes in the angioscotoma under oxygen deprivation, suggesting that in the treatment

of glaucoma, oxygen inhalations, or drugs increasing the oxidation of the tissues, may be indicated. In cases associated with venous stasis, which also causes widening of the angioscotoma "identical" with that produced by oxygen deprivation, this has been successfully corrected by the administration of ephedrine, which causes vasoconstriction and a rise in blood pressure. Similar treatment might be used to combat the visual and cerebral effects of anoxia in aviators.

Use of Coagulants In Ocular Operations

A. Busacca of São Paulo, Brazil, (*Archives of Ophthalmology*, 20:406, September, 1938) reports the use of coagulants in ocular operations of various types. He employs a coagulant from blood platelets (coagulen) which has always given good results in his cases. For operations on the eyeball an injection of 20 c.c. of coagulen is given subcutaneously (in the abdominal wall) several hours before operation (the evening before for an early morning operation). This method of using a coagulant has proved of special value in operation for cataract whether by the intracapsular or extracapsular operation. If a preliminary injection of the coagulant has been given, it will be seen after keratotomy that a dense coagulum will form, which may have to be removed by forceps. Blood that has extravasated into the anterior chamber also coagulates rapidly; this can usually be removed by lavage of the anterior chamber; occasionally it must be extracted with forceps. After removal of the coagulum, the hemostasis remains complete. The adhesion of the conjunctival flap is more solid and the formation of the anterior chamber is facilitated by "the tenacity of the coagulum." In plastic operations on the eye, instead of giving the coagulant by injection, it is applied locally in powdered form, when hemostasis becomes necessary; after the coagulum forms and has been removed, the operation is resumed. The author has found that this prevents postoperative bleeding in plastic work, and also "promotes coalescence of the flap with the underlying tissues," which doubtless

facilitates the "taking of the graft."

COMMENT

An efficient coagulant is occasionally imperative if the eye is to be saved. The hemophilias will quite naturally come to mind, but diabetics often develop cataracts and the great danger after cataract extraction in these cases is hemorrhage into the anterior chamber, not infection. There is a very great need for this sort of remedy but its routine use in cataract cases does not seem indicated. Bleeding after operations of whatever kind on eyes with secondary glaucoma might be controlled by this remedy and tip the scale toward success.

R.I.L.

Surgery of Secondary Glaucoma

Allen Greenwood (*American Journal of Surgery*, 42:10, October, 1938) notes that secondary glaucoma differs from primary types in that the increased intra-ocular pressure is due to changes in the fluids of the eye that hinder absorption and the presence in the fluid of cellular elements and other materials which are deposited in the angle of the anterior chamber and block the passage. Secondary glaucoma following complete obliteration of the central vein that results in blindness usually requires enucleation of the eye. If the glaucoma is secondary to partial obstruction of the central vein, where fair vision remains, good results may be obtained by a combination of iridencleisis and sclerectomy, especially if the pre-operative use of miotics diminishes tension and improves vision. For this operation, a conjunctival flap is made similar to that for the trephine operation but without splitting any of the layers of the cornea. The incision is made as far back as possible in the angle of the anterior chamber; the conjunctival flap is pulled forward so as to show "a good beveled lip of sclera." A portion of this lip is cut off, or preferably punched out with the scleral punch. The iridencleisis is then done. With this method no massage is necessary to establish the filtrating cicatrix. Secondary glaucoma occurring in tuberculous uveitis is difficult to treat; if non-surgical measures are not effective, repeated paracentesis is the safest surgical measure and often

sufficient; this should be combined with tuberculin treatment, giving minimal doses over a long period of time. Enucleation of the eye is sometimes necessary. In cases of glaucoma secondary to iritis, if medical treatment is not effective, repeated paracentesis may be sufficient, especially if combined with foreign protein therapy. If not, an iridectomy almost always gives good results. In glaucoma secondary to a beginning cataract, the author prefers to do an iridectomy first and then remove the lens later. When glaucoma follows a cataract operation, if miotics do not relieve it, the author has found several types of operation effective—trephining, iridencleisis, or sclerectomy; in some cases a cyclodialysis may be used. In secondary glaucoma, the method of treatment must be selected according to the conditions in each case and with reference to the primary cause.

COMMENT

No one is better qualified to discuss this most difficult problem than Dr. Greenwood. Every eye clinic has its quota of these unpromising cases and the conservative note in his paper is the result of much experience. The title of the paper limits the treatment to surgery but x-ray therapy cannot be forgotten in cases with blood in the chamber. Tuberculous iritis and the degenerative changes of senile eyes with cataract may have this feature. The modern preparations of epinephrine and similar drugs do help some cases of unyielding glaucoma after cataract extraction. The concluding sentence of the review of his paper contains the secret of whatever success one may have.

R.I.L.

Recurrent Retinal and Vitreous Hemorrhages In Young Adults (Eales' Disease)

R. T. Paton, (*Archives of Ophthalmology*, 20:276, August, 1938) reports 2 cases of recurrent retinal and vitreous hemorrhages occurring in young men. The patients were both in apparent good health, but one of them gave a positive reaction to 0.1 c.c. of a 1:100,000 dilution of tuberculin and the other a slightly positive reaction to 0.01 mg. of tuberculin, although neither showed clinical evidence or roentgenographic signs of

tuberculosis. Both were given injections of tuberculin throughout the course of the disease, and are still receiving weekly injections, although no hemorrhages have occurred for some time (in the first case, six years). In the first case seven severe hemorrhages occurred in the right eye and four in the left eye in the course of a year; the veins appeared engorged at the time or just previous to the occurrence of the hemorrhages. At the last examination, approximately six years after the last hemorrhage, the veins still were somewhat dilated, but there were no scars or other signs of an old inflammatory process in the retina; both fundi were normal, and the vision was normal, although during the recurrence of hemorrhages there had been marked diminution of vision. In the second case, the vision has been restored to two-thirds of normal; the last examination showed atrophy or recession of the blood vessels, especially in the right eye.

In the same month, S. H. McKee of Montreal, Canada, (*Canadian Medical Association Journal*, 59:142, August, 1938) reported a similar case in which retinal hemorrhages usually accompanied by vitreous hemorrhages occurred repeatedly in the left eye over a period of six years. This patient gave a history of epistaxis in childhood; at the time of the occurrence of the first hemorrhage, he was in good health, "but lacking somewhat in spirits and energy." No evidence of tuberculosis was found, but he spent some months in a sanatorium with resulting increased vitality and energy. The right eye was never involved and vision in that eye is normal; the vision in the left eye shortly after the last hemorrhage was only one-sixth normal; but before this last hemorrhage it had been normal. The author considers that prognosis for vision is poor, as no treatment has been found that is effective in controlling the hemorrhages. He is

not convinced that tuberculosis is the cause of the hemorrhages in such cases.

COMMENT

The cases reported by Dr. Paton were formerly in the group with etiology in doubt. The introduction of the slit-lamp and the use of red-free ophthalmoscopy have given additional information which with x-ray examinations of the abdominal as well as the bronchial lymphatic glands helps to separate many of the hitherto doubtful cases and prove that they are really tuberculous. Dr. McKee's case is typical of an occasional case still in the doubtful group. Continued observation of these will undoubtedly solve the problem finally. It is wise to consider doubtful cases as tuberculous unless proven otherwise. In every form of tuberculous eye disease, rest and quiet are indispensable.

R.I.L.

Homatropine-Benzedrene Cycloplegia

H. F. Sudranski (*Archives of Ophthalmology*, 20:657, October, 1938) has found a combination of a 5 per cent. solution of homatropine hydrobromide with a 1 per cent. solution of benzedrene sulfate very satisfactory for the production of cycloplegia for refraction. The instillation of one drop of the homatropine solution followed in two to three minutes by one drop of the benzedrine sulfate solution produces complete cycloplegia within forty minutes; and increases the diameter of the pupil, owing to synergistic action of the two drugs in producing mydriasis. No synergistic action of the drugs was observed in the production of cycloplegia in the author's cases. The chief advantage of this method in refraction work is that, while the degree of cycloplegia attained is entirely satisfactory, with the small amount of homatropine employed, recovery from the cycloplegia effect is rapid. A number of patients have reported complete recovery in five to eight hours.

SPINAL ANESTHESIA

THOSE who have used spinal most extensively appear still to favor it, while those who have given it a less prolonged trial are prone to forsake it for the newer methods of general anesthesia which were not available when the pioneers of spinal did the groundwork. Undoubtedly, spinal today must face much keener competition than it did 8 or 9 years ago, when it made its world-wide sweep over the methods then in vogue of administering nitrous oxide and ether.—

Kenneth M. Heard, M.D. In *Current Researches in Anesthesia and Analgesia*,

WATER RETENTION IN PREGNANCY

It is thus apparent that in the absence of severe anemia, congestive heart failure and acute glomerulonephritis, water retention in both normal and "toxemic" pregnancy depends essentially on the level of the plasma proteins and may be influenced, as in non-pregnant patients and laboratory animals, by changes in the intake of electrolytes, chief of which is sodium. Thus, water retention in pregnancy does not differ from water retention in the non-pregnant.

Maurice B. Strauss, M.D. In *American Journal of Medical Sciences*, June, 1938.

THE OBESE DIABETIC PATIENT

The great majority of obese diabetic patients, particularly those 40% or more overweight, do not need insulin. When such a patient is put on a low-caloric diet and his weight reduced, the blood sugar falls to normal without insulin. If such a patient is put on a diet that maintains his weight, large doses of insulin are needed to control the diabetes. Obviously, if simple weight reduction can achieve the same results as large doses of insulin, it is the treatment of choice in obese diabetic patients, especially as the loss of weight is in itself a desirable end.

Ferdinand Fetter, M.D., J. K. Durkin, M.D. and Garfield G. Dunnean, M.D., In *American Journal of Medical Sciences*, June, 1938.

BILIARY TRACT DISEASES

—Continued from page 566

abnormally to arsphenamine, tests of hepatic function should be performed as a routine. False Wassermann reactions may be encountered in carcinomatous involvement of the liver where necropsy may fail to show the presence of syphilis.

The United States Public Health Service in conjunction with the American Association of Pathologists found the

CARDIAC DISEASE

While I have noted a steady increase in cardiac affections during the past thirty odd years that I have been practicing medicine, the enormous increase during the past decade is astounding. Not only is there a great prevalence of organic heart disease, but also of functional and reflex disturbances which often closely simulate the organic disease. The cause for the greater frequency of cardiac and of pseudo-cardiac affections is generally attributed to the general and local infections, diabetes, greater incidence of rheumatic affections, arteriosclerosis, toxic goiter, etc., as well as to the fast and furious pace of our present mode of living.

Samuel A. Loewenburg, M.D. In *Journal of the Medical Society of New Jersey*, June, 1938.

THE NEW BORN

Since the beginnings of modern medicine much has been done about death. Great waves of plagues have been studied and controlled; deaths from contagion have, by the application of new knowledge, been diminished; surgical mortality has been scrutinized and many fatal factors have been removed; and underlying all this activity has been a constant crusade to lower mortality from the so-called child-bed fevers. This effort has culminated in our greatly reduced maternal mortality. But we have neglected our new-borns.

Robert E. Wright, M.D. In *Journal of the Medical Society of New Jersey*, June, 1938.



margin of error (i.e., negative reactions) to range up to 34.2 per cent in known syphilitics in secondary or tertiary stages. Hence the importance of clinical examinations for signs and symptoms of syphilis—despite negative blood or spinal Wassermann, Kline, Kolmer or Kahn reactions.

Liver function tests are indicated routinely whenever symptoms of nausea or vomiting or upper abdominal distress persist more than forty-eight hours. Very frequently evidence of liver damage will be found which should guide therapy accordingly.

4901 NORTH 13TH STREET.

Medical Book News

* All books for review and communications concerning Book News should be addressed to the Editor of this department, 1115 Bedford Avenue, Brooklyn, New York.

Edited by Alfred E. Shipley, M.D., Dr. P.H.

British Symposium on Rheumatism

THE RHEUMATIC DISEASES. A Course of Lectures arranged by The Medical Staff of the St. John Clinic and Institute of Physical Medicine. Edited by Sir Leonard Hill, M.B. and Philip Ellman, M.D. Baltimore, William Wood & Company, [c. 1938]. 270 pages, illustrated. 8vo. Cloth, \$4.00.

Sir Leonard Hill and Philip Ellman have edited a brief but comprehensive volume on rheumatic diseases in children and adults. The contributions consist of summaries of post graduate lectures given by prominent British clinicians at the St. John Clinic and Institute of Physical Medicine, London. A fair share of this book is devoted to physical medicine and its applications to rheumatism. There is a good review of gold therapy with the signs and symptoms of early toxic reaction to this form of therapy. Much stress is laid on the arthritis of menopause which the British feel is very commonly associated with hypothyroidism as well as hypertension.

ANDREW M. BABEY.

Biochemistry for the Physician

PHYSIOLOGICAL AND CLINICAL CHEMISTRY. By William A. Pearson, M.D. and Joseph S. Hepburn, M.D. Second edition. Philadelphia, Lea & Febiger, [c. 1938]. 467 pages, illustrated. 8vo. Cloth, \$5.50.

MEDICAL TIMES, DECEMBER, 1938



Classical Quotations

• Since I have seen three diabetics in the course of a year die, with remarkable similar symptoms in which there was a peculiar comatose condition preceded and accompanied by dyspnea ["Kussmaul's air hunger"], I believe that it is not merely a play of chance, but am of the opinion that it has to do with a form of death in diabetes which is rarely observed and bears the closest relationship to the disturbances in the metabolism in diabetes.

Adolf Kussmaul. *Deutsch. Arch. f. klin. Med.* (1874), XIV, 1-46.

This book is divided into three parts. Part I is devoted to physiological chemistry. After a few introductory chapters, in which the authors give a brief but excellent survey of the principles of physical chemistry and organic chemistry, they take up a consideration of the lipins, carbohydrates, proteins, enzymes and the composition of body tissues.

Part II is given to food and metabolism. Here the reader will find a study of food analysis, a consideration of vitamins, and an excellent presentation of the metabolism of various foods, normal as well as pathological. Basal metabolism, the maintenance of acid-base equilibrium and similar subjects of clinical importance are briefly but thoroughly discussed.

Clinical Chemistry is the heading given to Part III. Here are two chapters on the chemistry of digestion, including a description of various clinical tests. These are followed by chapters on feces, blood, urine and milk. The final chapter is a study of water analysis.

This mere enumeration gives no idea of the wealth of information packed into this comparatively small volume of some 460 pages. The consideration of the buffer system in the blood or the presentation of the transport of oxygen and

CO₂ are but two examples of the masterly way in which the authors have handled their subject.

In the preface there is to be found the following sentence "The purpose has been to present the essential facts of the subject for physicians and medical students." This purpose has been admirably fulfilled.

BENJAMIN DAVIDSON.

A Bacteriological Handbook

PRINCIPLES AND PRACTICE OF BACTERIOLOGY. By Arthur H. Bryan, M.A. and Charles Bryan, M.D. New York, Barnes & Noble, Inc. [c. 1938]. 267 pages, illustrated. 8vo. Cloth, \$2.25.

This little textbook deals with agricultural, industrial, plant, and veterinary bacteriology, pathogenic organisms and immunity, predominantly from the technical point of view.

The almost telegraphic style is apparently necessary in order to cover the large amount of material in a small volume. Added are questions from the State Board examinations.

U. FRIEDEMANN.

Adventure as a Career

I SWEAR BY APOLLO. A Life of Medical Adventure. By William E. Aughinbaugh, M.D. New York. Farrar & Rinehart, [c. 1938]. 420 pages. 8vo. Cloth, \$3.00.

To stay-at-homes, adventure as a career has a glamorous appeal, for the adventurer, after all, is in each one of us. This conflict accounts for much of the neuroticism of those who are obliged "to make a cage of laws and to stand on the perch." We eagles and canaries, born to be free, alike make pitiful attempts to escape. These attempts betray us.

Dr. Aughinbaugh is a medical Ulysses who began by running away from home at the age of eleven and has been consistently running away ever since. We envy the "outlaw" in him wholeheartedly. We who are bound by narrow social ties peer curiously from behind our palisades and bars at this figure of large destiny. In spirit we cooperate with him, masking a degree of hostile resentment, and com-

pensate for our immolation by insisting that the adventurer invariably reaches a point when the mistress that he worships fails him, indeed trips him up and strangles him, whereupon he ceases to be an adventurer. Says William Bolitho: "It is her perfidy—here is her majesty and cruelty—that loads him with prizes, that muffles him with the veils of her benevolence, to chain him with gold and victories so that he dares not go on, to change him from a lover into a slave. It is when the pirates count their booty that they become mere thieves." Did not the greatest of adventurers all finally flop—Alexander, Columbus, Charles XII of Sweden, Catiline, and Napoleon?

But Dr. Aughinbaugh has not flopped. He is the exception that proves the rule. For in his old age he has written a fabulous (only seemingly so), racy, ribald, Rabelaisian, bawdy saga that is unique. And it is plain that his service to humanity has been very great. After

all, he has not been irresponsible, for he was needed greatly in dreadful catastrophes and fearsome epidemics *everywhere*, and was always oddly present just when needed most, and always nobly did his duty by Apollo, so impressively invoked in the Hippocratic oath. His are the courageous spirit and the matter-of-

fact stamina of the

traditional pioneers of this country, who were never at a loss when economic or physical survival was threatened, and who were the antitheses of the paternalized, soft, and self-pitying saps who crowd so many American horizons today. It would be a poor breed that could not understand this man Aughinbaugh. He has been no truant from obligations. He has been a benefactor, not a pest. The butterfly has not become a caterpillar in this case. For this book is itself an adventure—a token that its author has not been led back into any cage. Unlike other adventurers, his course is still straight, not parabolic. Our wish to him is yet more adventures. After this book,

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who shall dare to say that he has reached the end of the trail, or that his sun has set?

ARTHUR C. JACOBSON.

The Latest Revision of "Bethed"

MATERIA MEDICA DRUG ADMINISTRATION AND PRESCRIPTION WRITING. By Oscar W. Bethed, M.D. Fifth edition. Philadelphia, F. A. Davis Company, [c. 1938]. 577 pages, 8vo. Cloth, \$5.00.

This well-known book on Prescription Writing and Materia Medica has been revised to conform to the eleventh revision of the United States Pharmacopoeia and the sixth revision of the National Formulary.

Part II—Prescription Writing merits favorable comment. Anyone who is called upon to write a prescription would do well to become thoroughly acquainted with this section of the book.

CHARLES SOLOMON.

Thrilling Life and a Successful Career!

THE LIFE OF CHEVALIER JACKSON. AN AUTOBIOGRAPHY. New York, The Macmillan Company, [c. 1938]. 229 pages, illustrated. 8vo. Cloth, \$3.50.

This book is a rare treat, intimately descriptive of the career of a widely publicized doctor, delightful to the eye in its well illustrated format, and progressively interesting in its presentation. To the layman, Dr. Jackson appears as the tireless enthusiast who has made the bronchoscope the life saver for many a child who has been the victim of careless supervision or attention. What a noble figure of a medical man for the laity to have described, instead of the weak brothers made familiar in a recent novel. To the physician, Dr. Jackson stands preeminent, a successful idealist in a special branch of surgery. The acceptance of his specialty and the approval of the principles of his bronchoscopy did not, however, come at once. He refers to expressions of lack of confidence on the part of some of his conferees, and, later in life, when, at long last, full success had been achieved, he acknowledged a congratulatory letter from Dr. John Chalmers DaCosta, by a feeling expression of appreciation for having sent him patients, in his early years in Pittsburgh, "against the current."

There are, however, many aspects of

the personal life of Dr. Jackson, apart from the development of bronchoscopy—the actual technique of which is not discussed—which make this book so interesting and instructive. His youth, made unhappy by the unthinking but vicious conduct of his older classmates in that mining town in Pennsylvania; the game fight to obtain a medical education, financed in part by his gift of painting and wood-turning; the decision to become a nose and throat specialist; his ideals and economic problems; the calamity of his pulmonary infections when the heights of success had been reached but work was still to be done—all these are told with modesty and without rancor. One must read the book itself to find the justification for his attitude towards alcohol and tobacco, for his criticisms of the political machine in his state and elsewhere, for his deep regards for women and for the description of his methods of teaching students and training assistants. One will learn, too, of his early aptitude for mechanics and the early use of those principles which made the bronchoscope possible. Read some of his personal letters to conferees and critics, to professors and to patients—all courteous and considerate. The note that seems to ring true throughout is perseverance, optimism and humanitarianism. An outstanding figure in American medicine is well described in a fine autobiography.

JOSEPH RAPHAEL.

Occupational Therapy for the Mental Patient

THE OCCUPATIONAL TREATMENT OF MENTAL ILLNESS. By John I. Russell, M.B. Baltimore, William Wood and Company, [c. 1938]. 231 pages, illustrated. 8vo. Cloth, \$2.50.

The subject matter of this book is divided into theoretical and practical. The former considers the aim and rationale of occupational therapy, and emphasizes the need of developing in the patient a measure of self-assurance and self-respect. These are, we believe, fore-runners of an urge to some helpful objective. The author considers the psychological approach and psychotic types in prescribing treatment.

Under organization and management are included personnel training, selection and grouping of patients, habit training, outdoor classes, ward classes, physical training and recreation, the

occupation center, equipment and placement.

Part 2 covers the practical application of the principles of occupational therapy, and embraces the various kinds of work actually done, such as designing, woodwork, weaving, plastic modeling and related activities, all of which are taken up in considerable detail.

While the English methods are somewhat different from those in the United States, in that we depend less upon nurses and attendants for the application of our therapy, the fundamental concepts should be helpful to any person interested in this line of work.

A. E. SOPER.

A New Physiological Chemistry

A TEXTBOOK OF BIOCHEMISTRY. By Roger J. Williams, Ph.D. New York, D. Van Nostrand Company, [c. 1938]. 525 pages, illustrated. 8vo. Cloth, \$6.00.

The author has employed a unique organization of this book by dividing it into five parts. This arrangement establishes a logical interrelationship by answering the following questions: (1) How are biochemical materials (in general) constituted? (2) Of what are our body tissues composed? (3) Which of the chemical constituents of foods are necessary for nourishment? (4) What mechanisms does the body apply in the control of chemical transformations? (5) What are the details of the process whereby the food materials are transformed into tissues with their living activities?

Thus, in part one he discusses the biochemistry of organic and inorganic constituents and the physical chemistry of colloids. Part two he devotes to the quantitative analysis of the various constituents of the body discussed in part one. Part three consists of the description of the food stuffs, vitamins, salts and other components of the diet. Part four contains an excellent description of biochemical catalysts, temperature control, permeability, hormones and respiration, and part five is a section devoted to digestion, absorption and intermediary metabolism.

This book will serve as an excellent textbook in Biochemistry. It is suitable for the medical student and physician.

WILLIAM S. COLLENS.

A New Edition of "Osler"

THE PRINCIPLES AND PRACTICE OF MEDICINE. Designed for the use of Practitioners and Students of Medicine. Originally written by the late Sir William Osler, M.D. Revised by Henry A. Christian, M.D. Thirteenth edition. New York, D. Appleton-Century Company, [c. 1938]. 1424 pages. 4to. Cloth, \$9.00.

Within a month of the publication of the first edition of Osler's Practice of Medicine, that forward-looking scholar was making notes on his interleaved copy of the book, looking toward a revision. As long as he lived repeated revisions kept the book in its position as a leader in guiding the medical thought of English speaking practitioners. It changed much in content during these years and continued to change through the four editions which Dr. Thomas McCrae supervised. Professor Henry A. Christian of Harvard, who was also an early student of Osler, has taken up the task of again revising the book, as he states, "wisely or unwisely, with the assistance or criticism of no one," and presents us with the thirteenth edition. On reviewing the volume, the reader is inclined to underscore the "wisely" and thank him for it. It maintains the tradition of presenting an individual point of view, and incidentally provides an extraordinarily well balanced and comprehensive consideration of the field of medical practice.

Dr. Christian has added two hundred forty pages of new material, and has radically rearranged and revised much of the book. There can be little doubt that the original author would have it so in the year 1938. Instead of beginning with typhoid fever, as in all the other editions since the early days when typhoid was so prevalent, the present author begins with pneumonia, now so much more nearly "the captain of the men of death." The virus diseases can now be grouped together, and the deficiency states expanded and more clearly defined. The anemias are classified on the basis of recently discovered factors governing these diseases, and are discussed in the light of these factors. So with the other diseases, advances in knowledge have been noted and woven into the text.

Under the heading "Chronic Arthritis" the two chief types are described together, although throughout the article distinctions are repeatedly made. Focal

infection is finally relegated to a minor role in the etiology, but for once the editor seems to have mislaid his blue pencil, and has allowed to remain considerable discussion that would seem to point to another conclusion.

The digestive system receives full and fresh consideration, as does the respiratory system. The glands of internal secretion, as in the older volume, are treated conservatively, accepting only well proven conclusions.

In the case of renal and heart disease the reader should know that he is reading Christian, as this author's well-known views are frankly set forth. In controversial matters, however, they are expressed as opinions and not as facts.

All of the sections reflect the wide experience of the author as well as his familiarity with current research and opinion.

TASKER HOWARD.

A Practical Guide on Oto-Laryngology

PRACTICAL OTOTOLOGY, RHINOLOGY AND LARYNGOLOGY. By Adam E. Schlanser, M.D. Philadelphia, Lea & Febiger, [c. 1938]. 315 pages, illustrated. 8vo. Cloth, \$4.50.

Practical Otology, Rhinology and Laryngology by Col. Schlanser, M.C., U.S.A. is a worthy book embodying really practical oto-laryngology. It is a clinical work presuming a knowledge of and therefore omitting the anatomy, pathology, and function of the parts except where necessary to make clear the treatment outlined. Since the large part of practice in this field is of the casual sort and not linked to spectacular surgery, this book performs a real service. It outlines examination and treatment, and does not render itself of small value by referring to rather than explaining or describing procedure.

It covers the many ordinary routine examinations, treatments and surgical treatments, which many standard textbooks refer to or inadequately apply. Hence as an informative guide for the general practitioner required to practice also in this field, for the residents and interns, assistants and clinical assistants, on oto-laryngological services in general or special hospitals and clinics, this work should be of considerable value. Surgical procedures are well outlined or described, sometimes from recognized authoritative sources, and due credit

given. The work is recommended. Its text is simple and easy to read, and the content orderly and practical.

CHARLES R. WEETH.

A Text on English Pharmacy

A TEXT-BOOK OF PHARMACEUTICS. By Arthur O. Bentley. Fourth edition. Baltimore, William Wood and Company, [c. 1937]. 1001 pages, illustrated. 8vo. Cloth, \$5.00.

This book since its first appearance in 1926 and now in its fourth edition has been very popular with English pharmacists. The first chapter deals with the political history of pharmacy in Great Britain, 1511-1936. The subsequent sections take up in detail the general principles and apparatus used in pharmaceutical processes; dispensing; pharmaceutical biology; and lastly, the biological assay of pharmaceutical preparations such as insulin, digitalis and strophanthus, the arsphenamin group, pituitary (posterior lobe) extract, vitamins, toxins, antitoxins and sera. It is a well written book and should appeal to pharmaceutical students who desire to get an English version of the subject in contrast to what is being taught in our American schools of pharmacy.

FRED. SCHROEDER.

Expose of the Birth-Control Industry

THE ACCIDENT OF BIRTH. By the Editors of Fortune. New York, Farrar and Rinehart, [c. 1938]. 40 pages, illustrated. 12mo. Cloth, \$.75.

The book is a clear-cut exposé of the birth-control industry, claimed to be a \$250,000,000-a-year business. The authors are not concerned with the scientific aspect of the various methods for contraception, but with the dangers of their indiscriminate use. The subject is presented compactly within the brief space of 40 pages, and makes a definite plea for adequate legislation. The book is recommended to the medical profession as well as to the laity.

ALEXANDER H. ROSENTHAL.

The Problem of Suicide

MAN AGAINST HIMSELF. By Karl A. Menninger. New York, Harcourt, Brace and Company, [c. 1938]. 485 pages. 8vo. Cloth, \$3.75.

Dr. Menninger has reached an almost Aesculapian stage in his career. He begins to approach problems from the philosophical and literary as well as the purely scientific or medical aspect. In this book, he deals with the problem of

suicide. Actually, he has collected a vibrant material from all paths of human conduct and used it to illustrate the manifold expressions of suicidal drives. He follows the death trends and wishes in all varieties of psychiatric classifications. He takes the destructive-creative categories Freud has originated as the eros-death instinct antinomy and traces their tug-of-war in the clinical symptomatology of the mental and nervous diseases. In short, suicide in its crassest form is but the apex of a triangle which spreads out over a myriad of pseudo or quasi-suicides in every life situation. The book is a novel approach to the problems of psychiatry, and will give any physician the feeling that he has broadened the horizon of his experience on reading it.

SAM PARKER.



Medical Journalism in the British Empire
BRITISH PERIODICALS OF MEDICINE. A Chronological List. By W. R. LeFanu, M.A. Baltimore, The Johns Hopkins Press, [c. 1938]. 93 pages. 4to. Paper, \$1.25.

Bibliographic workers and especially librarians welcome this useful check list of British medical periodicals.

The list is arranged chronologically, Part I comprising the periodical publications issued in all British lands from 1684 to 1899 and Part II those published from 1900 to 1938. It is prefaced by a brief, interesting account of the evolution of medical journalism in the British Empire. The value of the list is enhanced by the alphabetical indexes of the publications listed. This publication originally appeared in the *Bulletin of the Institute of the History of Medicine*.

The possession of this list by a wider circle of users is made possible by the reprinting of it as a separate publication at the small cost at which it is offered.

Mr. LeFanu has made a useful addition to the working tools of those particularly interested in the bibliographic details of medical periodical literature.

CHARLES FRANKENBERGER.

Kovacs' Physical Therapy Revised

ELECTROTHERAPY AND LIGHT THERAPY. By Richard Kovacs, M.D. Third edition. Philadelphia, Lea & Febiger, [c. 1938]. 744 pages, illustrated. 8vo. Cloth, \$7.50.

Under ordinary circumstances, one might possibly question the reliability of a reviewer of a book, where the author has been the reviewer's teacher, and is now his chief. But a book that has gone through three editions in a period of five years certainly does not stand in need of any artificial support. Hence the question of bias may here be completely disregarded.

It is indeed a pleasure, once more, to delve into the thoroughly lucid description of the various electric and radiating modalities used in physical therapy. And in this, the third edition of the book, the author has brought the entire subject as up to date as today's magazine. Every chapter, every word has been carefully considered and reconsidered, so that the reader is sure of getting the very latest, and yet, most accurate information that is at present obtainable.

For the more scientifically inclined student, a new chapter has been added on the relationship of electrophysiology to electrotherapy, while the chapters on electrotherapy, galvanotherapy, with particular reference to electrophoresis have been enlarged, and almost entirely rewritten. Two new chapters have been devoted to that new and intriguing modality,—shortwave diathermy, and a whole new chapter given to the subject of Electropyræxia.

Eighty-seven new illustrations have been added to the already, thoroughly ample ones in previous editions, making a total of 307 in all.

For the general practitioner, the specialist, and student, this book remains the best guide in the field of physical medicine.

H. TEVEL ZANKEL.

A Small Handbook on T. B.

A MANUAL OF TUBERCULOSIS FOR NURSES AND PUBLIC HEALTH WORKERS. By E. Ashworth Underwood. Second edition. Baltimore, William Wood and Company, [c. 1938]. 404 pages, illustrated. 12mo. Cloth, \$3.25.

In writing a manual of tuberculosis, ostensibly for nurses and public health workers, Dr. Underwood of England has rendered a great service—a service not

only to nurses and public health workers but to all medical students and general practitioners of medicine. Here in some 379 pages is embodied a complete exposition of up-to-date knowledge of tuberculosis in all its varied protean manifestations. Its contents ranges from the etiology and pathogenesis of pulmonary tuberculosis through to the treatment of bone and joint tuberculosis, including several chapters on disinfection, post-sanatorium regime, administrative measures, and epidemiology of tuberculosis, together with a rather complete glossary of the technical terms employed. It is a valuable book.

FOSTER MURRAY.



Another Discussion of the Vitamins

VITAMIN B₁ (THIAMIN) AND ITS USE IN MEDICINE. By Robert R. Williams, Sc.D., and Tom D. Spies, M.D. New York, The Macmillan Company, [c. 1938]. 411 pages. 8vo. Cloth, \$5.00.

The amazing amount of material, limited to only vitamin B₁, reviewed, summarized and discussed by the authors in this monograph impresses one with the tremendous strides made in the field of vitamins in the past few years. This work proves that the practicing physician can not possibly keep up with the large amount of original literature, evaluate conclusions, or obtain a clear view of the clinical application of vitamins without the help of works similar to this.

One of the particular values of this monograph is a summary at the end of each chapter and the concluding short chapter—Recapitulation.

This work is highly recommended as the most complete and detailed survey on Vitamin B₁ which is "outstanding with respect to the universality of its function in living cells and the degree of dependence of the cells upon an adequate supply of it. The lack of no other accessory substance leads to so early, so profound, and so universal disaster, according to our present evidence."

PAUL CHADBOURNE ESCHWEILER.

Epitome of Abdominal Surgery Diagnosis

A SYNOPSIS OF THE DIAGNOSIS OF THE ACUTE SURGICAL DISEASES OF THE ABDOMEN. By John A. Hardy, M.D. St. Louis, The C. V. Mosby Company, [c. 1938]. 345 pages, illustrated. 12mo. Cloth, \$4.50.

The aim of the author of this book has been to "arrange concisely and completely every proved means of diagnosis of the acute surgical diseases of the abdomen."

He has accomplished this in an admirable way. In addition to the acute surgical diseases he has also included certain more chronic conditions that must be considered in making a diagnosis. This is a splendid book for the student, the general practitioner, the surgeon who does not see a large number of acute abdominal emergencies each year and even for the active surgeon.

It is concise, well arranged, well illustrated and a valuable addition to surgical literature.

HENRY F. GRAHAM.

Another Edition of Curtis' Diseases of Women

A TEXTBOOK OF GYNECOLOGY. By Arthur Hale Curtis, M.D. Third edition, Philadelphia, W. B. Saunders Company, [c. 1938]. 603 pages, illustrated. 8vo. Cloth, \$7.00.

This new edition of a popular text has been entirely rewritten with eight new chapters on anatomy, physiology and the endocrines. The anatomy has been written from a gynecological viewpoint as presented at examination and during operations. In addition to this, dissection and concentrated study of pelvic anatomy have enabled the author to present a detailed and comprehensive description of the female genitalia.

The chapters on the endocrines cover this subject concisely and thoroughly. The ever increasing importance of this field of medicine is evident in the large space devoted to it in the text.

The chapters on infections, tumors of the uterus and ovarian tumors follow the standard pattern usually found in textbooks, yet told simply and interestingly. The author readily displays his profound knowledge of the subject and his long experience as a teacher. This is clearly revealed in the chapter on cancer of the cervix: "Except for leukoplakia, naked eye study remains the most dependable asset in the recognition of questionable areas which may require

biopsy, time consuming hand-lens or colposcopic examination may be advantageous in selected cases."

The treatment of cervical cancer considers not alone the means employed by the author but those in the leading clinics here and abroad. The treatment as outlined is clear and succinct. The illustrations throughout the book by Tom Jones are excellent. The book should be in the library of anyone interested in gynecology.

FRANCIS B. DOYLE.

Berkeley's Gynecology

DISEASES OF WOMEN. By Ten Teachers under the direction of Clifford White, M.D. Edited by Sir Comyns Berkeley, Clifford White and Frank Cook. Sixth edition. Baltimore, William Wood & Company, [c. 1938]. 492 pages, illustrated. 8vo. Cloth, \$6.00.

The original ten teachers are no more, but this well-known book has maintained its high standard. Revision has been thorough, and the possible disadvantages of collective authorship have been overcome as usual by joint review and discussion.

The teaching is sound, the text clear, without redundancies; the illustrations are excellent, particularly in the single chapter devoted to operations. The medical student looking for a brief, yet comprehensive, text in gynecology will be pleased with this book. Its simplicity is outstanding.

CHARLES A. GORDON.

BOOKS RECEIVED for review are promptly acknowledged in this column; we assume no other obligation in return for the courtesy of those sending us the same. In most cases, review notes will be promptly published shortly after acknowledgment of receipt has been made in this column.

MAN AND HIS BODY. By Howard W. Haggard. New York, Harper & Brothers, [c. 1938]. 594 pages, illustrated. 8vo. Cloth, \$4.00.

FEMININE HYGIENE IN MARRIAGE. By A. F. Niemoeller, M.A. New York, Harvest House, [c. 1938]. 155 pages, illustrated. 12mo. Cloth, \$2.00.

HUMAN PATHOLOGY. A Textbook. By Howard T. Karsner, M.D. Fifth edition. Philadelphia, J. B. Lippincott Company, [c. 1938]. 1013 pages, illustrated. 8vo. Cloth, \$10.00.

ENDOCRINE THERAPY IN GENERAL PRACTICE. By Elmer L. Sevringhaus, M.D. Chicago, The Year Book Publishers, [c. 1938]. 192 pages, illustrated. 8vo. Cloth, \$2.75.

THE TREATMENT OF MORAL AND EMOTIONAL DIFFICULTIES. A Practical Guide for Parsons and Others. By Cyril H. Valentine, M.A. New York, The Macmillan Company, [c. 1938]. 148 pages. 12mo. Cloth, 3/6.

HONESTY. By Richard C. Cabot. New York, The Macmillan Company, [c. 1938]. 326 pages. 8vo. Cloth, \$2.50.

FEARFULLY AND WONDERFULLY MADE. The Human Organism in the Light of Modern Science. By Renée von Eulenburg-Wiener. New York, The Macmillan Company, [c. 1938]. 472 pages, illustrated. 8vo. Cloth, \$3.50.

UROLOGY. By Daniel N. Eisendrath, M.D. and Harry C. Rolnick, M.D. Fourth edition. Philadelphia, J. B. Lippincott Company, [c. 1938]. 1061 pages, illustrated. 4to. Cloth, \$10.00.

A TEXTBOOK OF MEDICAL BACTERIOLOGY. By David L. Belding, M.D. and Alice T. Marston, Ph.D. New York, D. Appleton-Century Company, [c. 1938]. 592 pages. 8vo. Cloth, \$5.00.

DIE EIWEISSKÖRPER DES BLUTPLASMAS. By Dr. H. Bennhold, Dr. E. Kylin and Dr. St. Rusznayk. Dresden, Theodor Steinkopff, [c. 1938]. 470 pages, illustrated. 8vo. Paper, RM 38.00.

THE PRACTICE OF MEDICINE. By Jonathan C. Meakins, M.D. Second edition. St. Louis, The C. V. Mosby Company, [c. 1938]. 1413 pages, illustrated. 4to. Cloth, \$12.50.

THE FUNDAMENTALS OF INTERNAL MEDICINE. By Wallace M. Yater, M.D. New York, D. Appleton-Century Company, [c. 1938]. 1021 pages, illustrated. 4to. Cloth, \$9.00.

BIG FLEAS HAVE LITTLE FLEAS OR WHO'S WHO AMONG THE PROTOZOA. By Robert Hegner. Baltimore, The Williams & Wilkins Company, [c. 1938]. 285 pages, illustrated. 4to. Cloth, \$3.00.

MODERN ANAESTHETIC PRACTICE. Edited by Sir Humphry Rolleston, M.D. and Alan A. Moncrieff, M.D. (The Practitioner Handbooks). London, Eyre & Spottiswoode Ltd., [c. 1938]. 231 pages. 8vo. Cloth, 10/6.

INTERNS HANDBOOK. A Guide, Especially in Emergencies, for the Intern and Physician in General Practice. Under the direction of M. S. Dooley, M.D. Second edition. Philadelphia, J. B. Lippincott Company, [c. 1938]. 523 pages. 16mo. Cloth, \$3.00.



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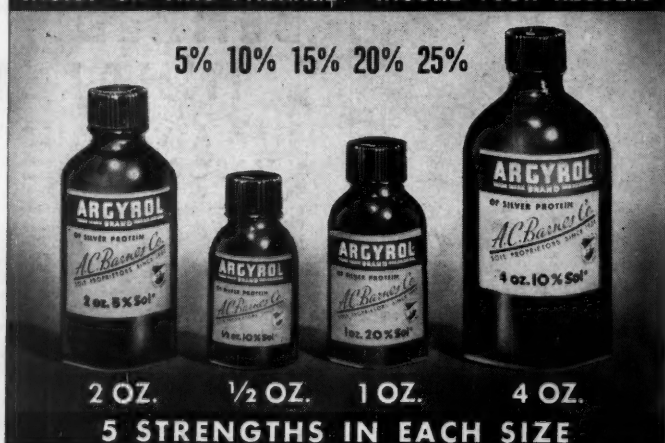
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